

From: "Li, Charling" <charling.li@vancouver.ca>
To: "Enright, Patrick" <Patrick.Enright@vancouver.ca>
Date: 4/9/2025 12:26:00 PM
Subject: RE: FOR REVIEW: EMGs v3.0

Hi Patrick, I've updated the EMGs files and created clean PDF copies in this folder
[WORKING FINAL - Energy, Carbon, EMG \(CCPs 12, 14, 21, 23\)](#)

Individual links below:

 [PDS - SUS - Energy Modelling Guidelines v3.0 draft clean 20250409.pdf](#)

 [PDS - SUS - Energy Modelling Guidelines v3.0 draft redline 20250409.pdf](#)

The weblinks for the 2 climate files are awaiting IT to upload so I will add those in when ready.

Thanks,
Charling

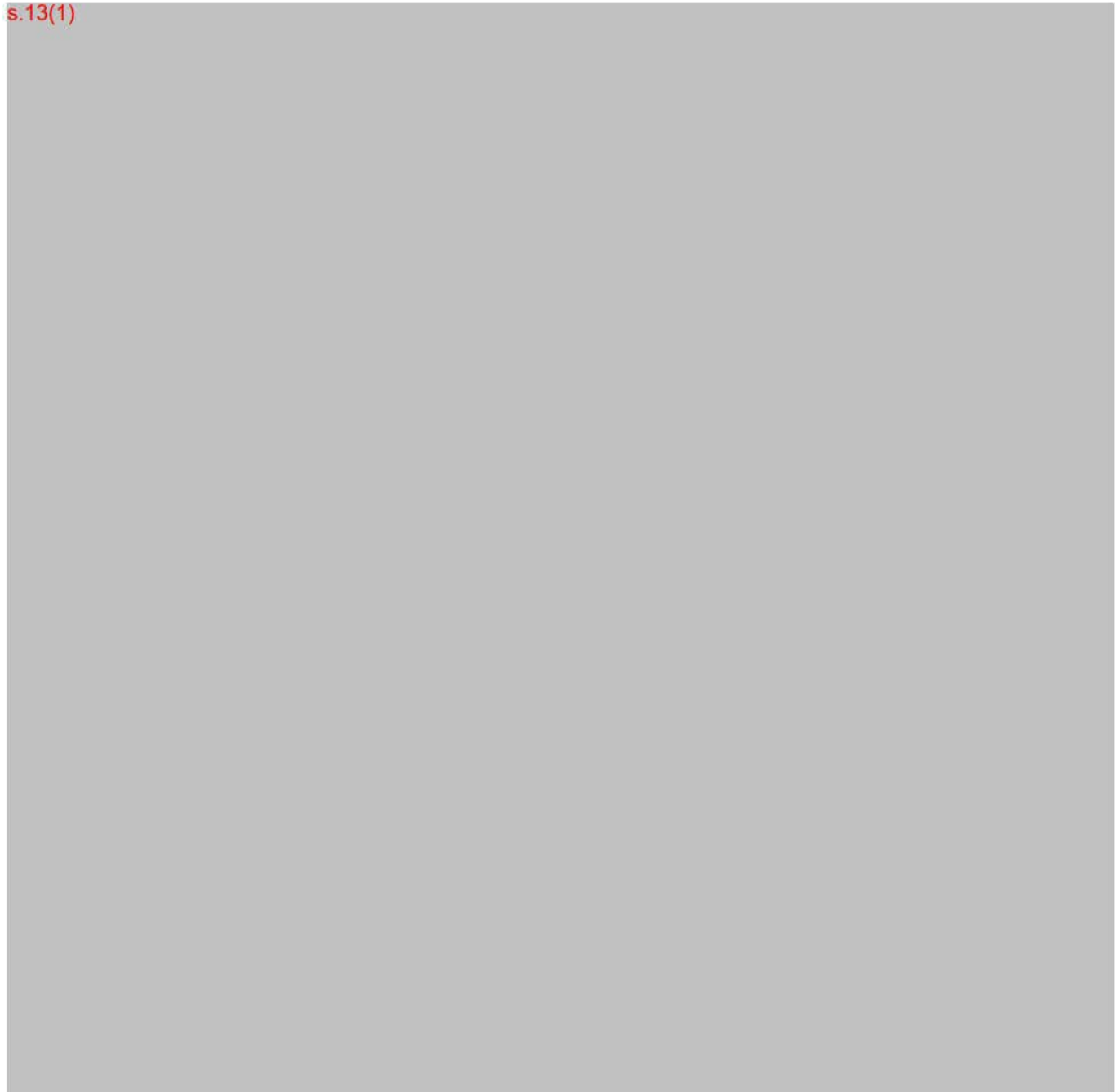
From: Li, Charling
Sent: Wednesday, March 5, 2025 1:04 PM
To: Enright, Patrick
Subject: FOR REVIEW: EMGs v3.0

Hi Patrick, can you please review EMGs v3.0 when you get a chance? Ideally in the next week or so.

 [PDS - SUS - Energy Modelling Guidelines v3.0 for Council 20250415 - IN PROGRESS.docx](#)

Thanks for the feedback re: overheating analysis. s.13(1)
s.13(1)

s.13(1)



Thanks,

Charling

From: Li, Charling
Sent: Monday, March 3, 2025 4:48 PM
To: Enright, Patrick <Patrick.Enright@vancouver.ca>
Subject: Overheating hours for single room cooling

Hi Patrick, I need some help talking/thinking through this topic. In finalizing the wording for

proposed v3.0 EMGs, s.13(1)
s.13(1)



Charling

s.13(1)



Charling Li, P.Eng., M.Urb. | Green Building Engineer
(she/her/hers)
Green & Resilient Buildings Branch | Sustainability Group | City of Vancouver
Charling.Li@vancouver.ca | 604.871.6833

For more information on green buildings, please visit <http://vancouver.ca/zeroemissions>

I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̅əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətaʔt / səlilwítulh (Tseil-Waututh) nations.

From: "Li, Charling" <charling.li@vancouver.ca>
To: "Riley Beise" <riley@focaleng.com>
CC: "Danny Taylor" <danny@focaleng.com>
"Kristian Storgard" <kristian@focaleng.com>
"Susan MacDougall" <susan@focaleng.com>
Date: 5/15/2023 12:07:00 PM
Subject: RE: Group 1 Draft Updates
Attachments: 23009 230508 Slim Buildings - Write Up - PE.docx
23009 230509 Overheating Analysis - CL.docx
23009 230509 Weather Files - Write Up-CL.docx
23009 DHW Write Up - CL.docx
23009 Miscellaneous Recommendations Write Up - CL.docx

Hi Riley, attached is our feedback. Thanks for your continuing hard work! When we review the Group2 feedback let's schedule more time to go through the draft recommendations since we have lots to talk about.

Cheers,
Charling

From: Riley Beise
Sent: Monday, May 15, 2023 6:33 AM
To: Li, Charling
Cc: Danny Taylor ; Kristian Storgard ; Susan MacDougall
Subject: [EXT] RE: Group 1 Draft Updates

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Thanks Charling, no worries, we have lots to do in getting going on Group 2 so no rush. If it would be helpful to discuss any of the comments further before completing your comments let us know.

Riley Beise P.Eng., BEMP
Principal | he/him
t 250.516.6088 ext. 2 | m 250.661.3817
riley@focaleng.com



From: Li, Charling <charling.li@vancouver.ca>
Sent: Friday, May 12, 2023 4:26 PM
To: Riley Beise <riley@focaleng.com>
Cc: Danny Taylor <danny@focaleng.com>; Kristian Storgard <kristian@focaleng.com>; Susan MacDougall <susan@focaleng.com>

Subject: RE: Group 1 Draft Updates

Hi Riley and team, I was supposed to get the draft recommendations with comments back to you today but we're still working through them. Hope to get them to you by Tuesday.

Thanks and enjoy the hot sunny weekend!

Charling

From: Riley Beise <riley@focaleng.com>
Sent: Tuesday, May 9, 2023 5:45 PM
To: Li, Charling <charling.li@vancouver.ca>
Cc: Danny Taylor <danny@focaleng.com>; Kristian Storgard <kristian@focaleng.com>; Susan MacDougall <susan@focaleng.com>
Subject: [EXT] RE: Group 1 Draft Updates

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Sorry, missed the fifth one, see attached.

Riley Beise P.Eng., BEMP
Principal | he/him
t 250.516.6088 ext. 2 | m 250.661.3817
riley@focaleng.com



From: Riley Beise
Sent: Tuesday, May 9, 2023 5:44 PM
To: Li, Charling <charling.li@vancouver.ca>
Cc: Danny Taylor <danny@focaleng.com>; Kristian Storgard <kristian@focaleng.com>; Susan MacDougall <susan@focaleng.com>
Subject: RE: Group 1 Draft Updates

Hello Charling.

Please see our draft updates for Group 1 attached for your review. Included are:

1. Overheating Analysis
2. Slim Buildings
3. DHW
4. Miscellaneous Recommendations
5. Weather Files

We realize that there is not a lot of time between now and our meeting on Thursday to review, so we

will come to the meeting with a list of key items we'd like to run by you, further another time. If you do end up reviewing them all in detail prior to the meeting then that of course would be great too!

These are in-progress drafts so there is still work to do on our end to whittle them down and refine, but it's exciting to see things coming into form.

Best regards,

Riley Beise P.Eng., BEMP
Principal | he/him
t 250.516.6088 ext. 2 | m 250.661.3817
riley@focaleng.com



From: Riley Beise <riley@focaleng.com>
Sent: Tuesday, May 9, 2023 6:37 AM
To: Li, Charling <charling.li@vancouver.ca>
Cc: Danny Taylor <danny@focaleng.com>; Kristian Storgard <kristian@focaleng.com>; Susan MacDougall <susan@focaleng.com>
Subject: Group 1 Draft Updates

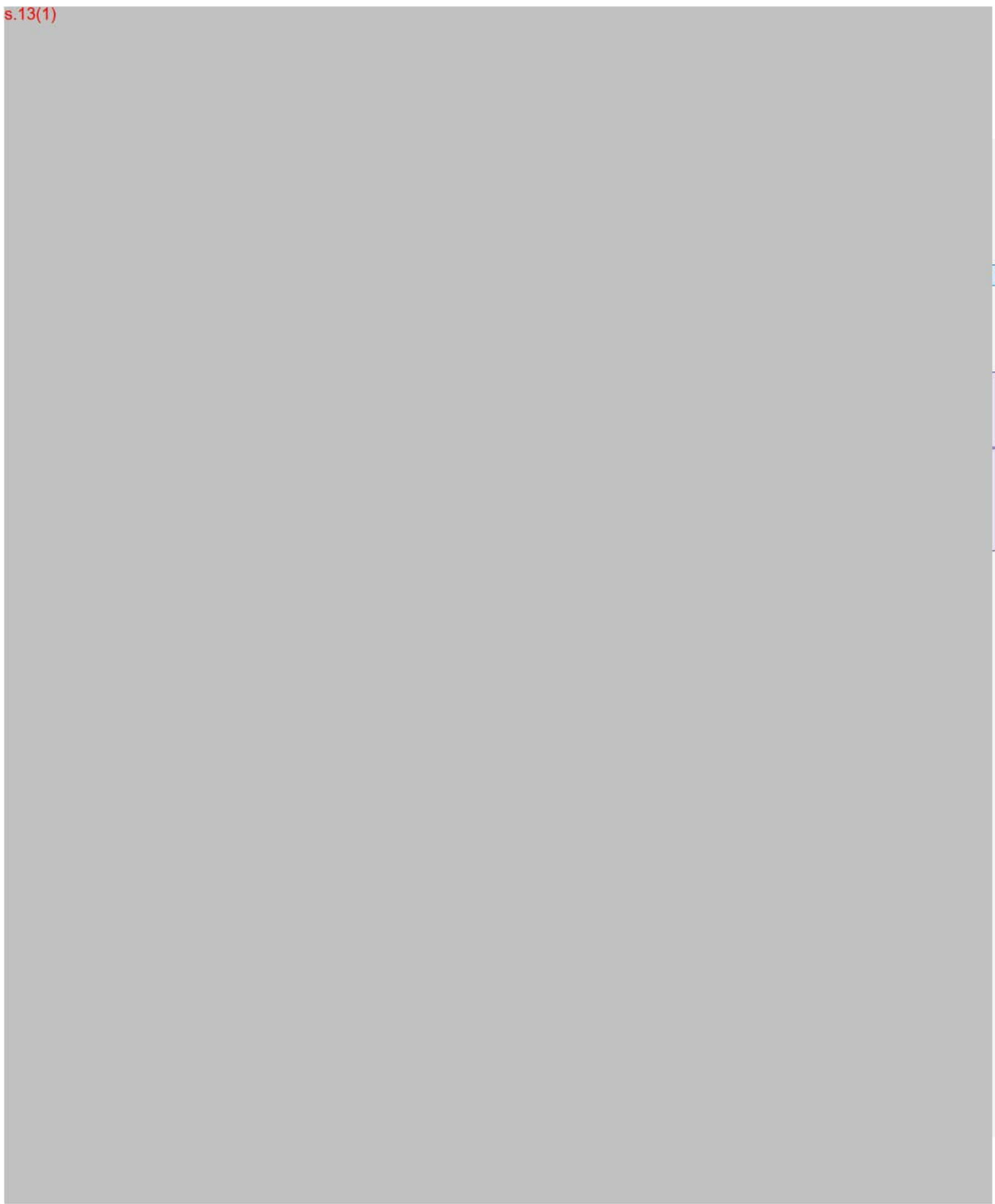
Good morning Charling.

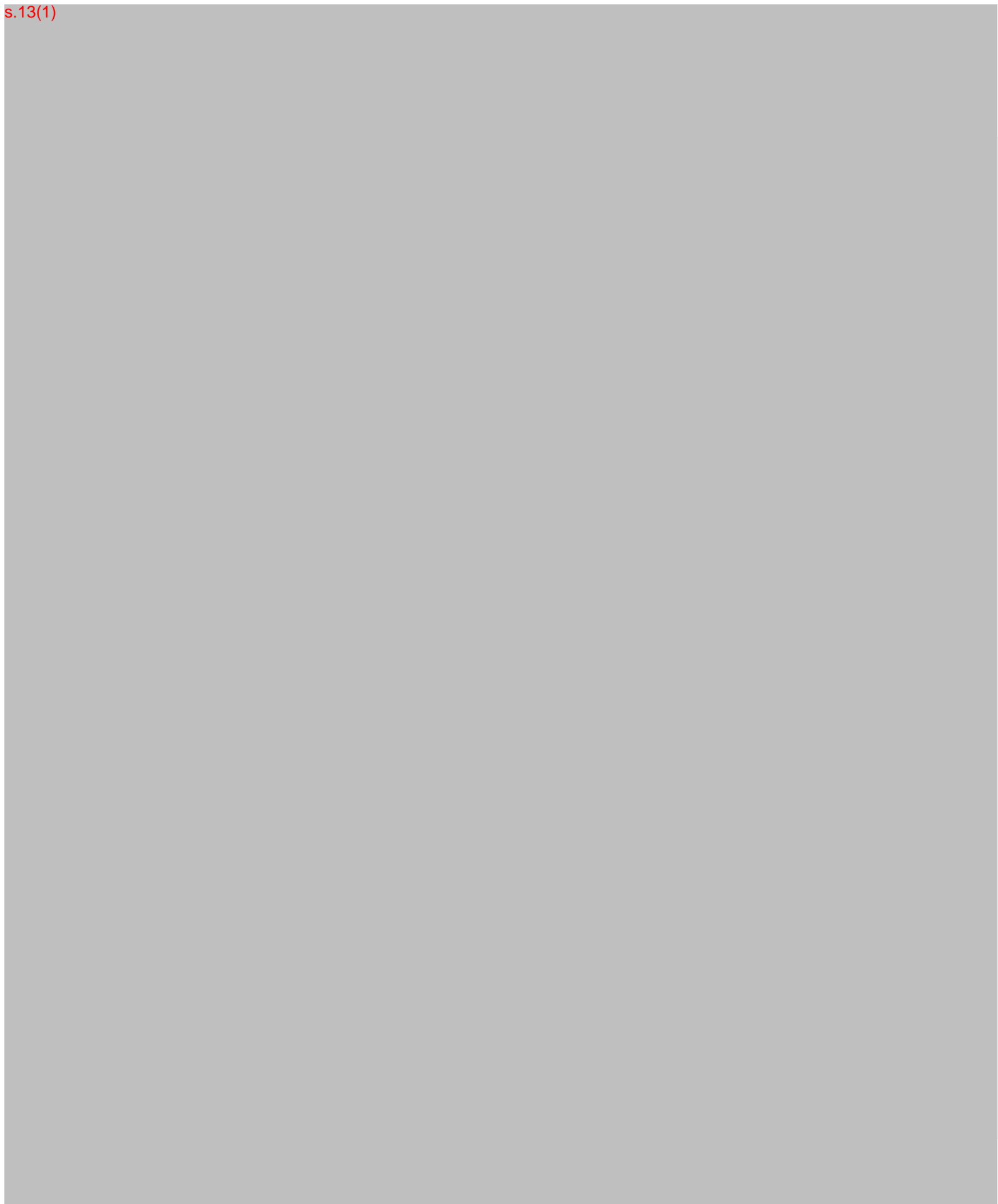
Just a heads up that we're still refining our group 1 draft updates, we will get them across to you by end of day today.

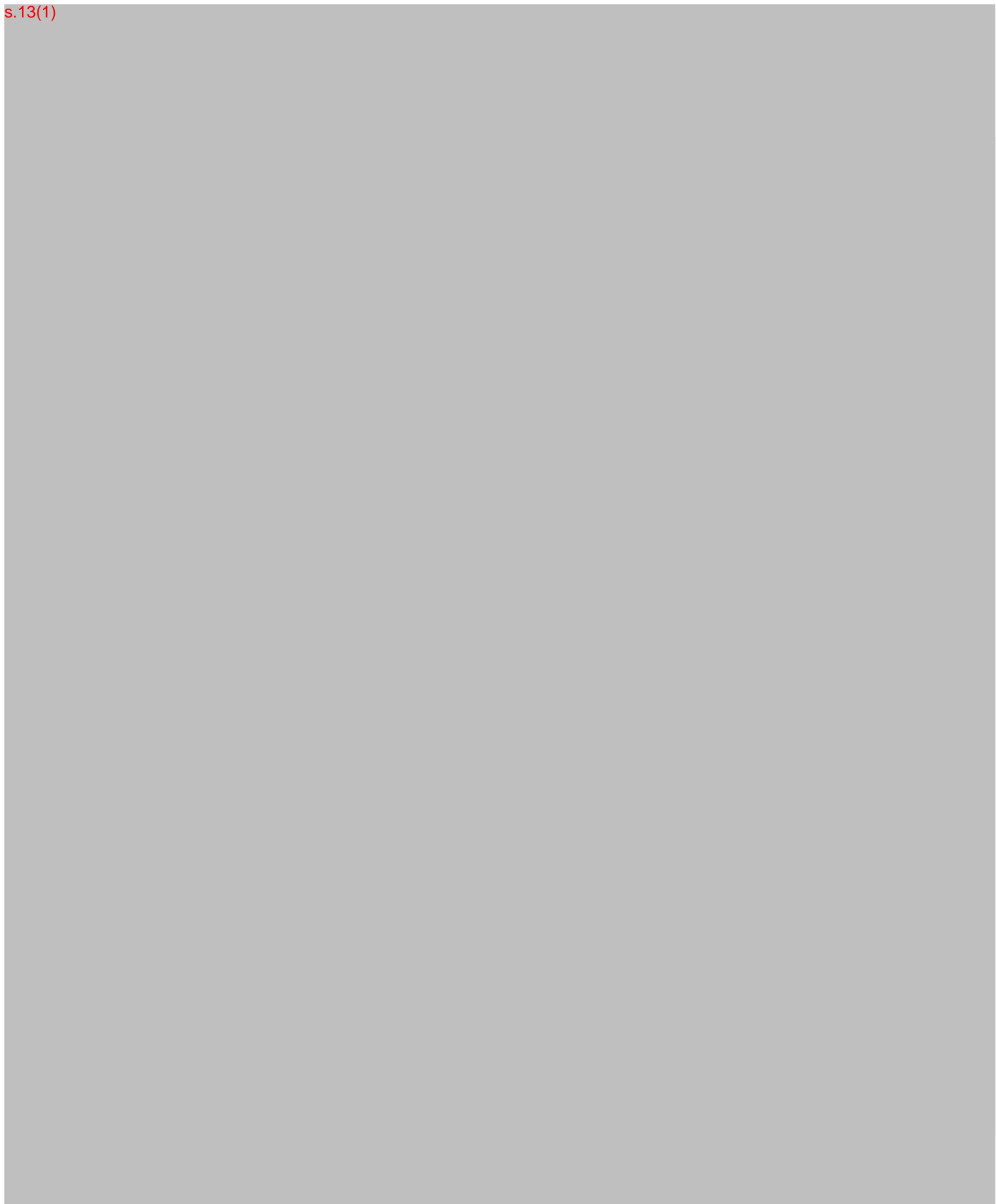
Cheers,

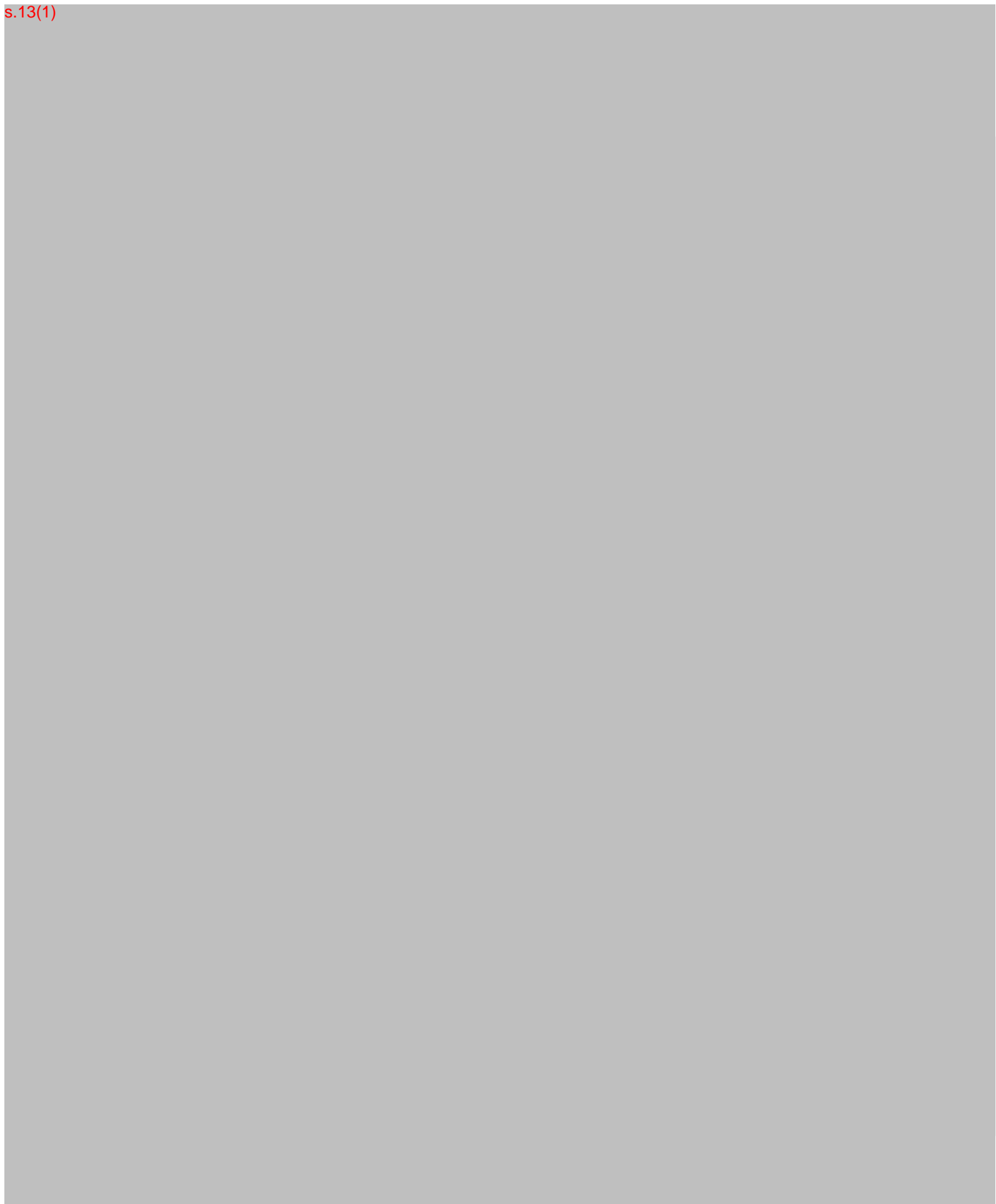
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riley@focaleng.com

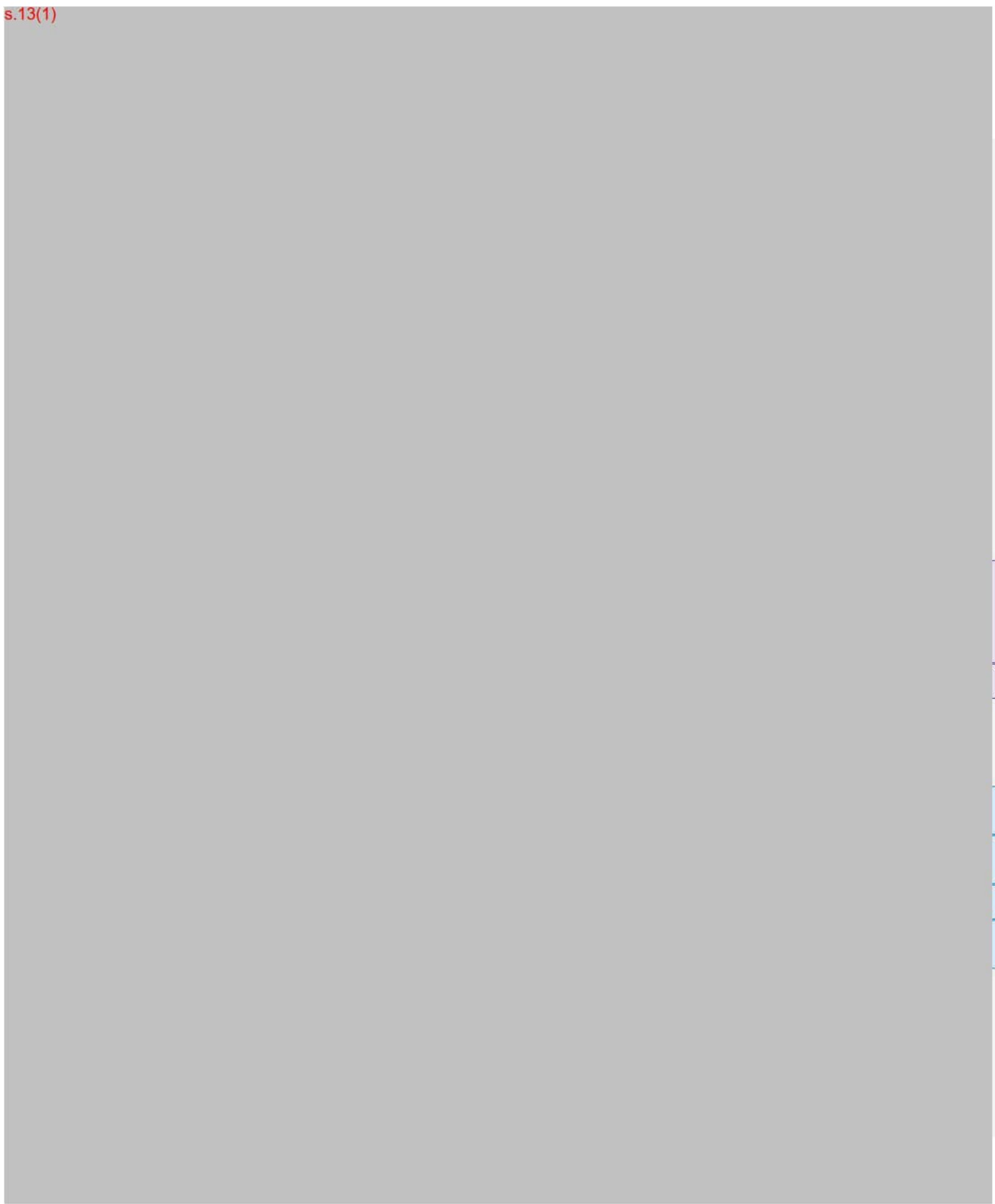


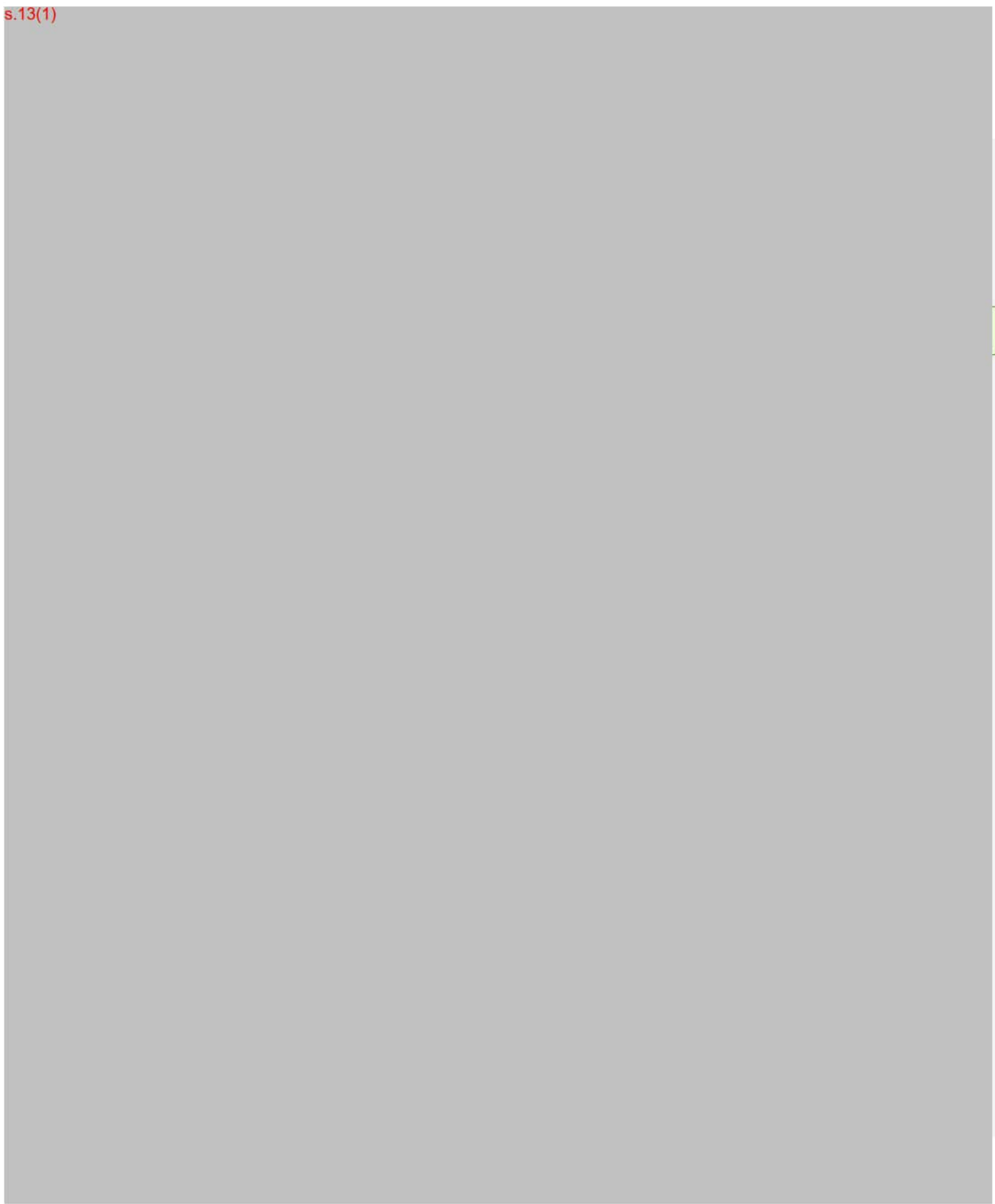


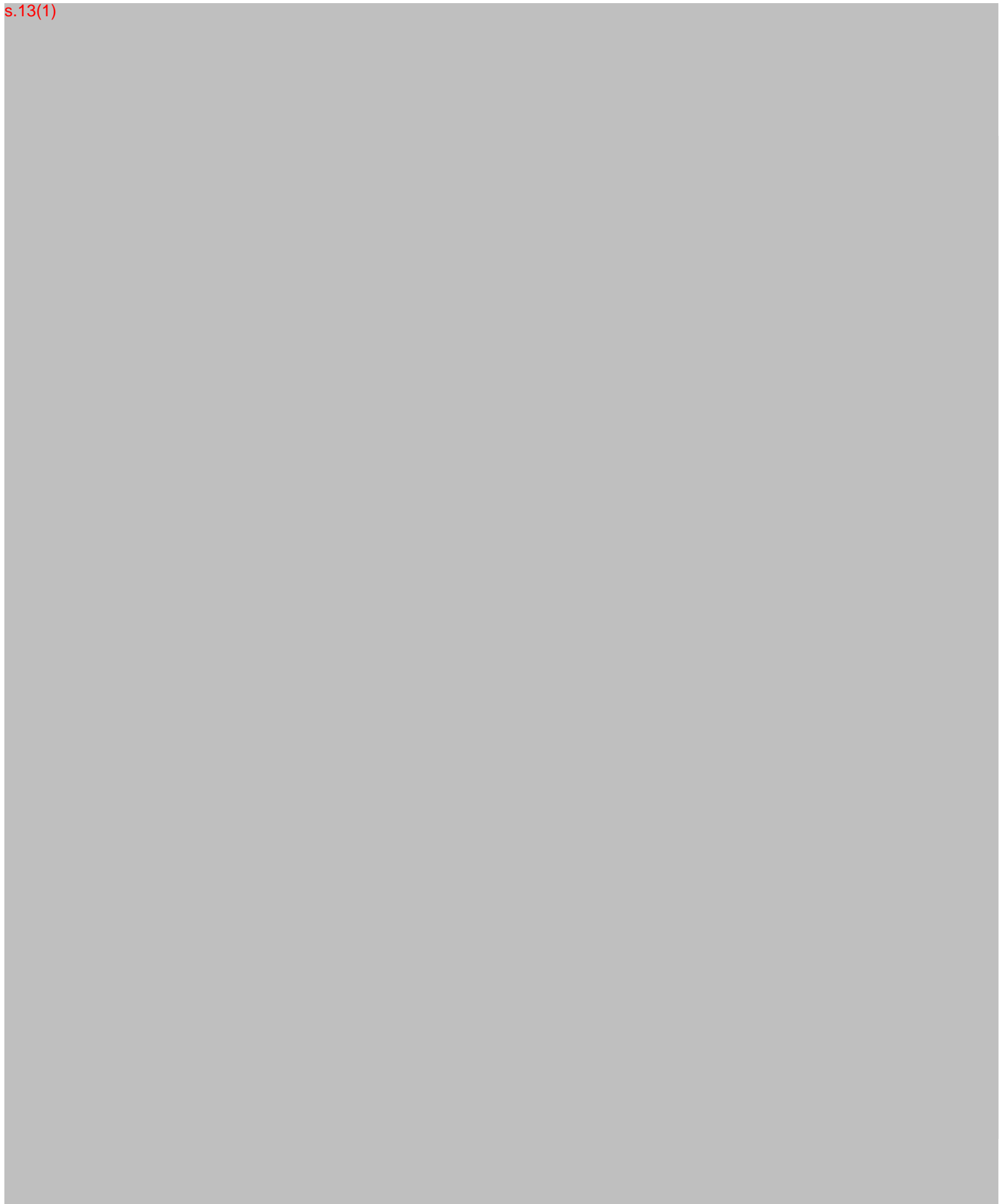


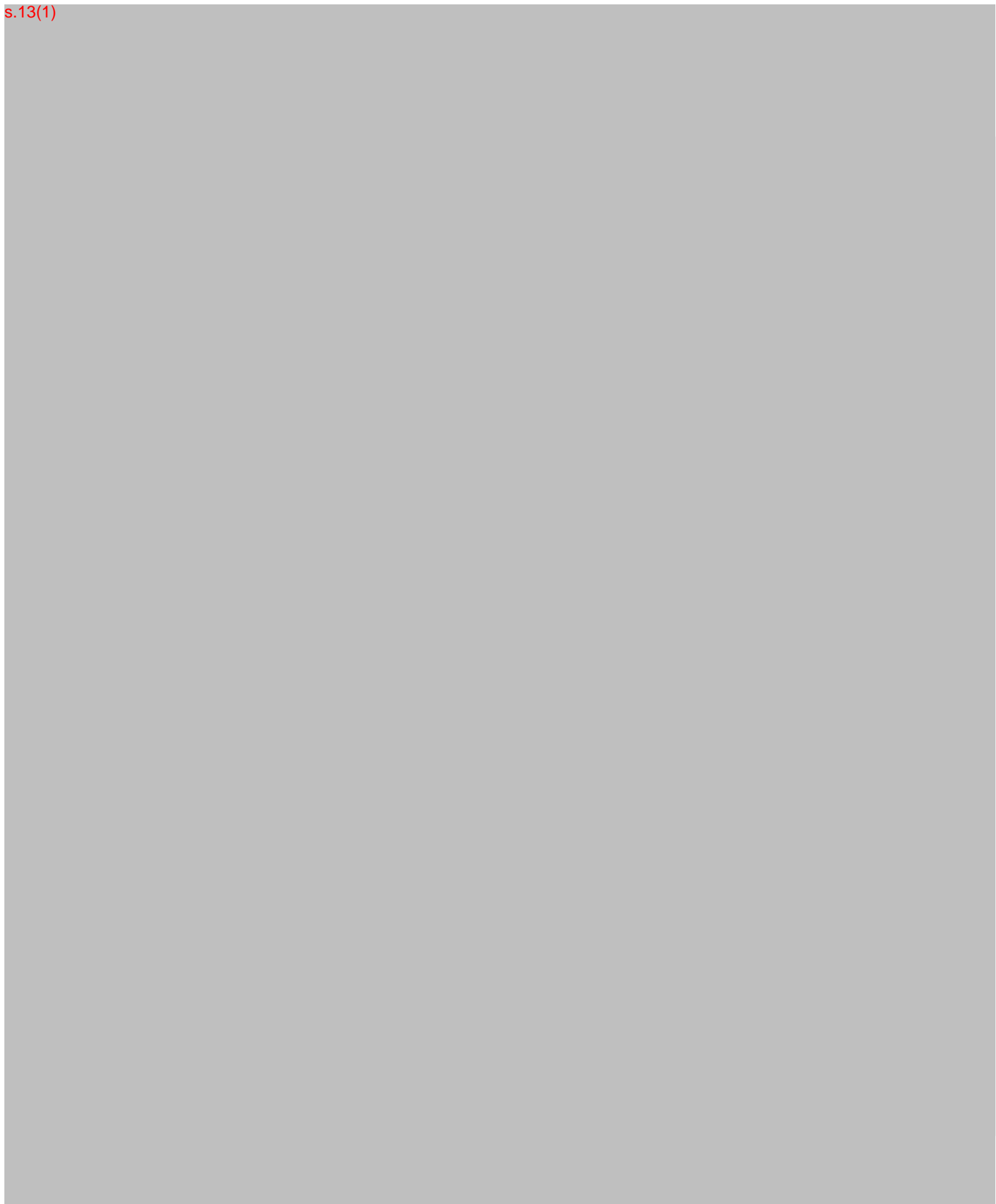


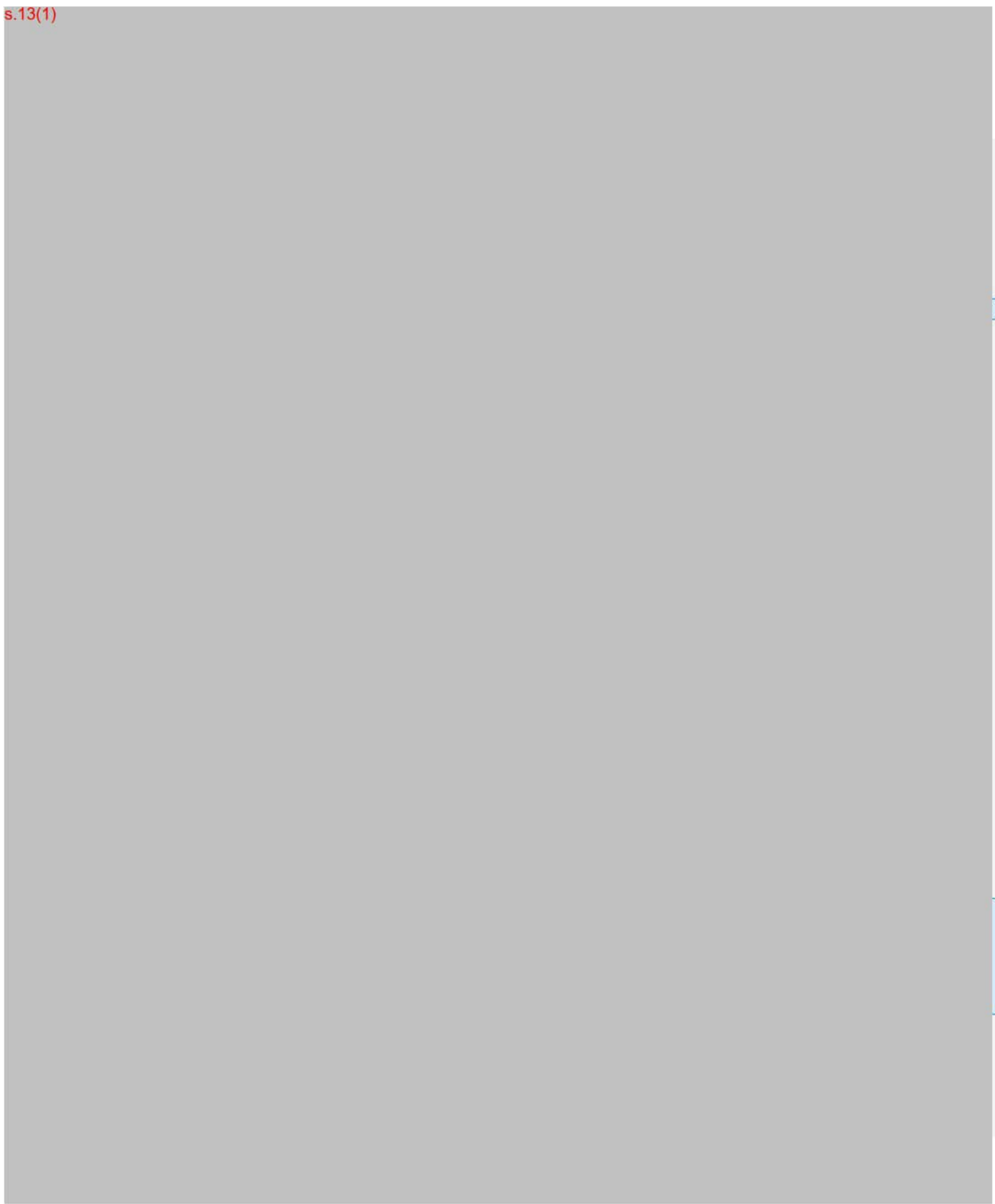




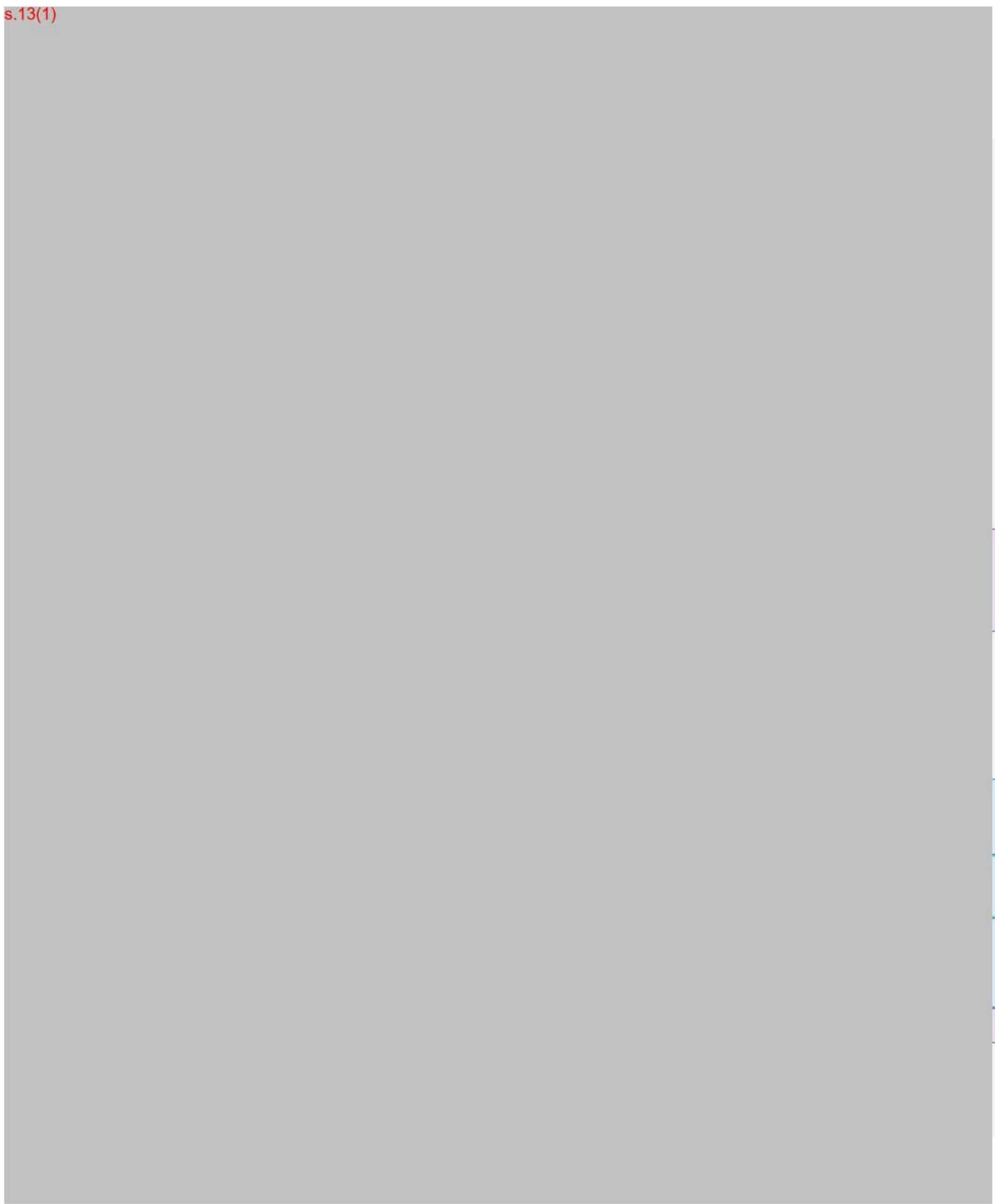


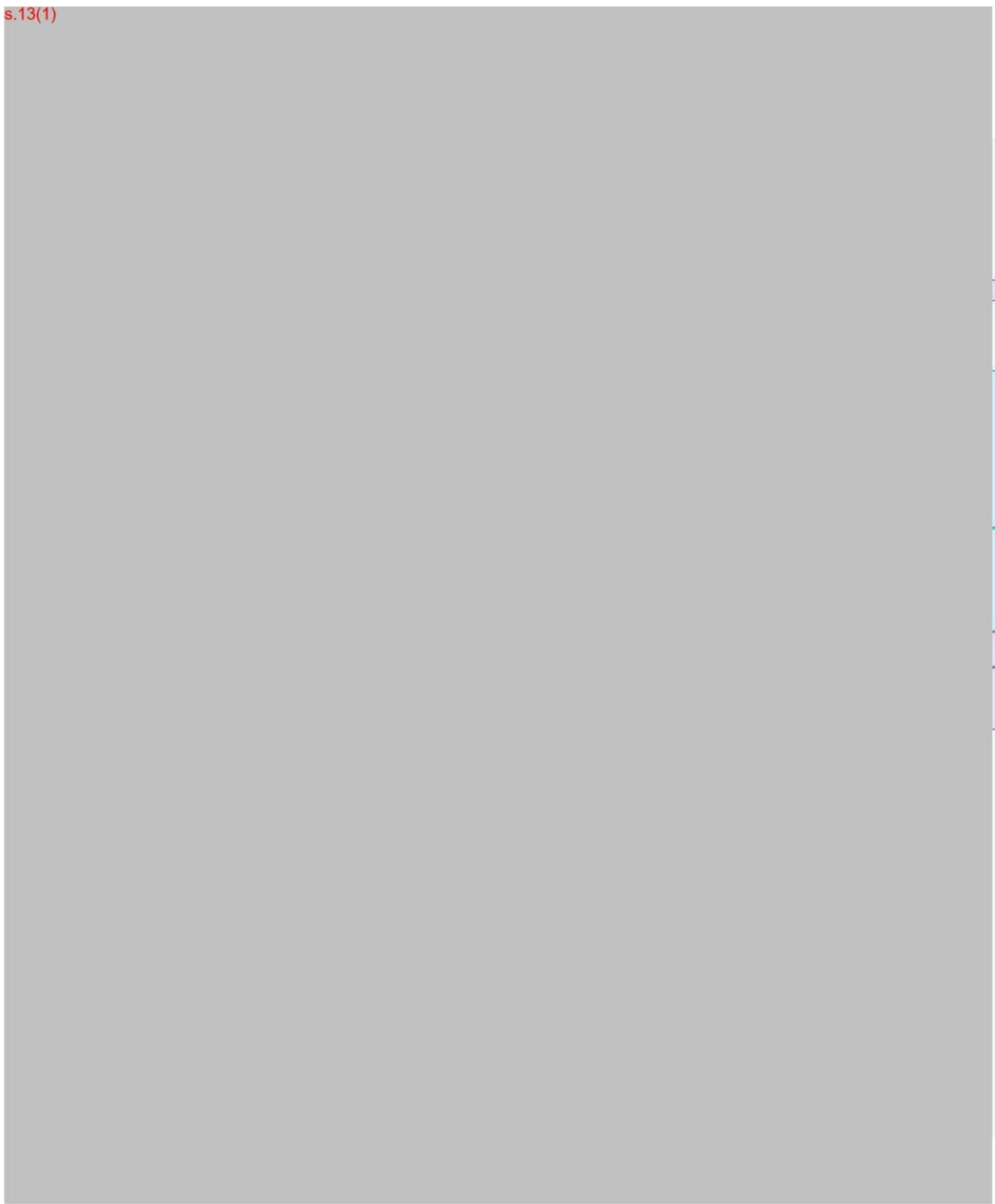


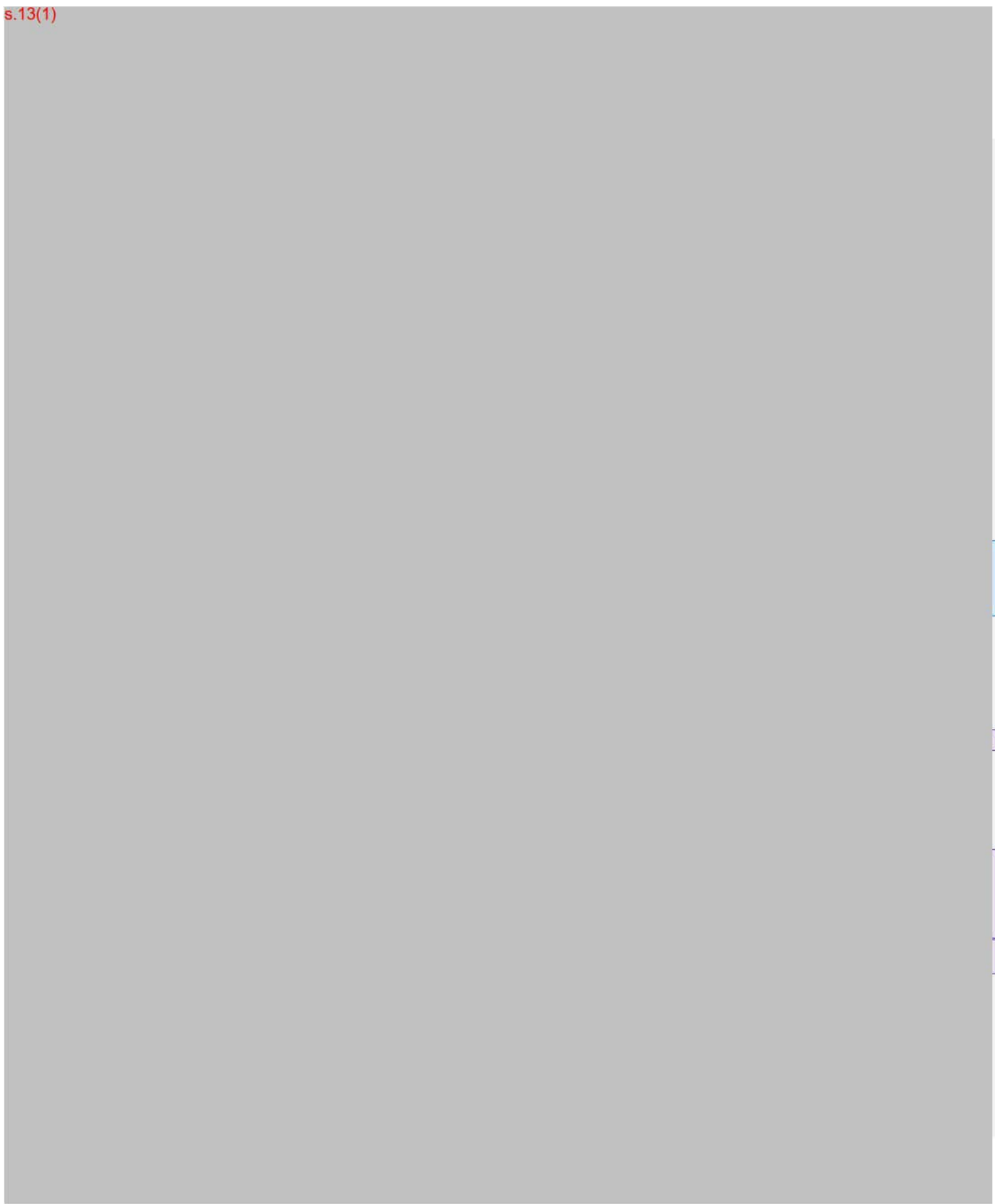


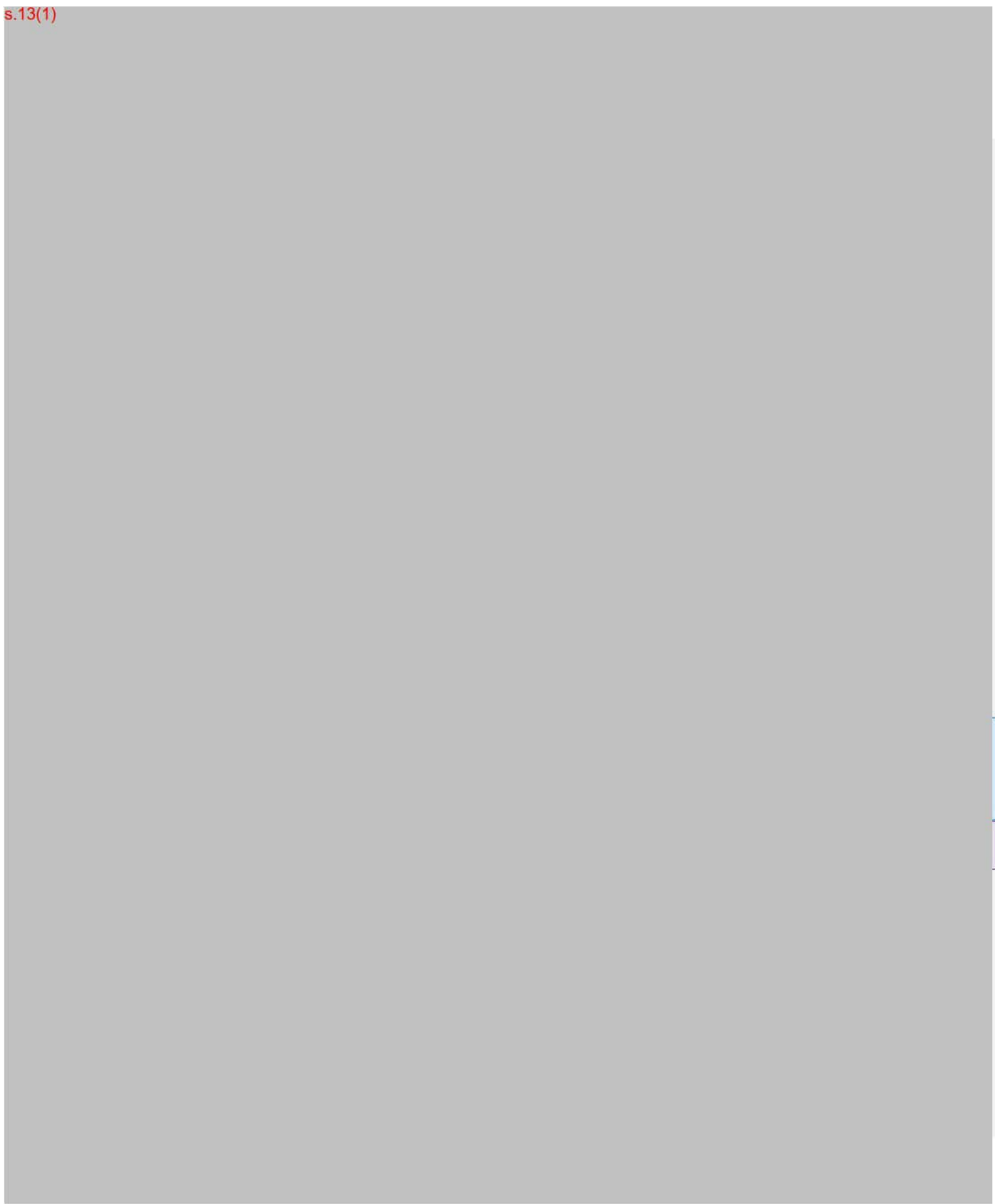


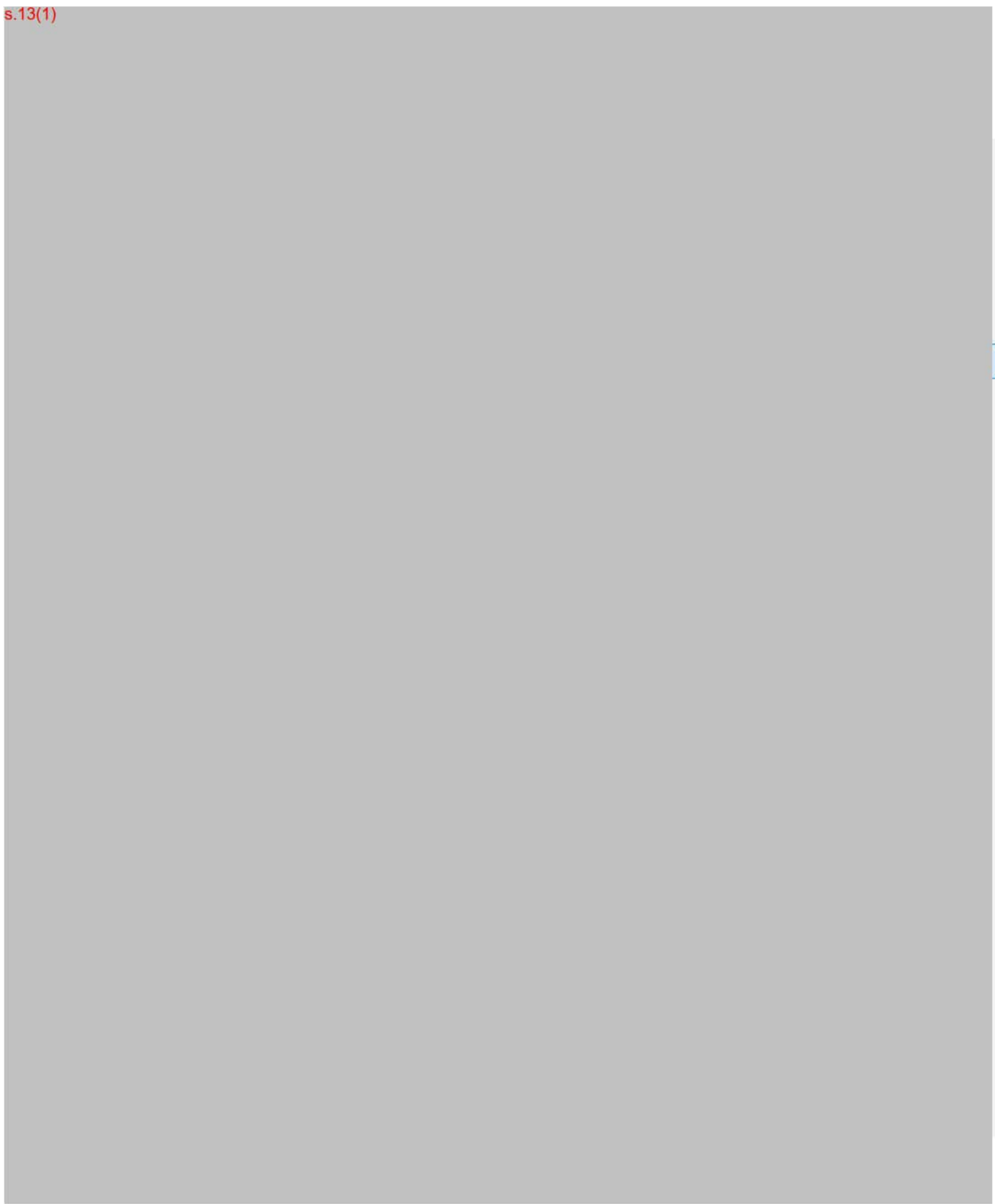


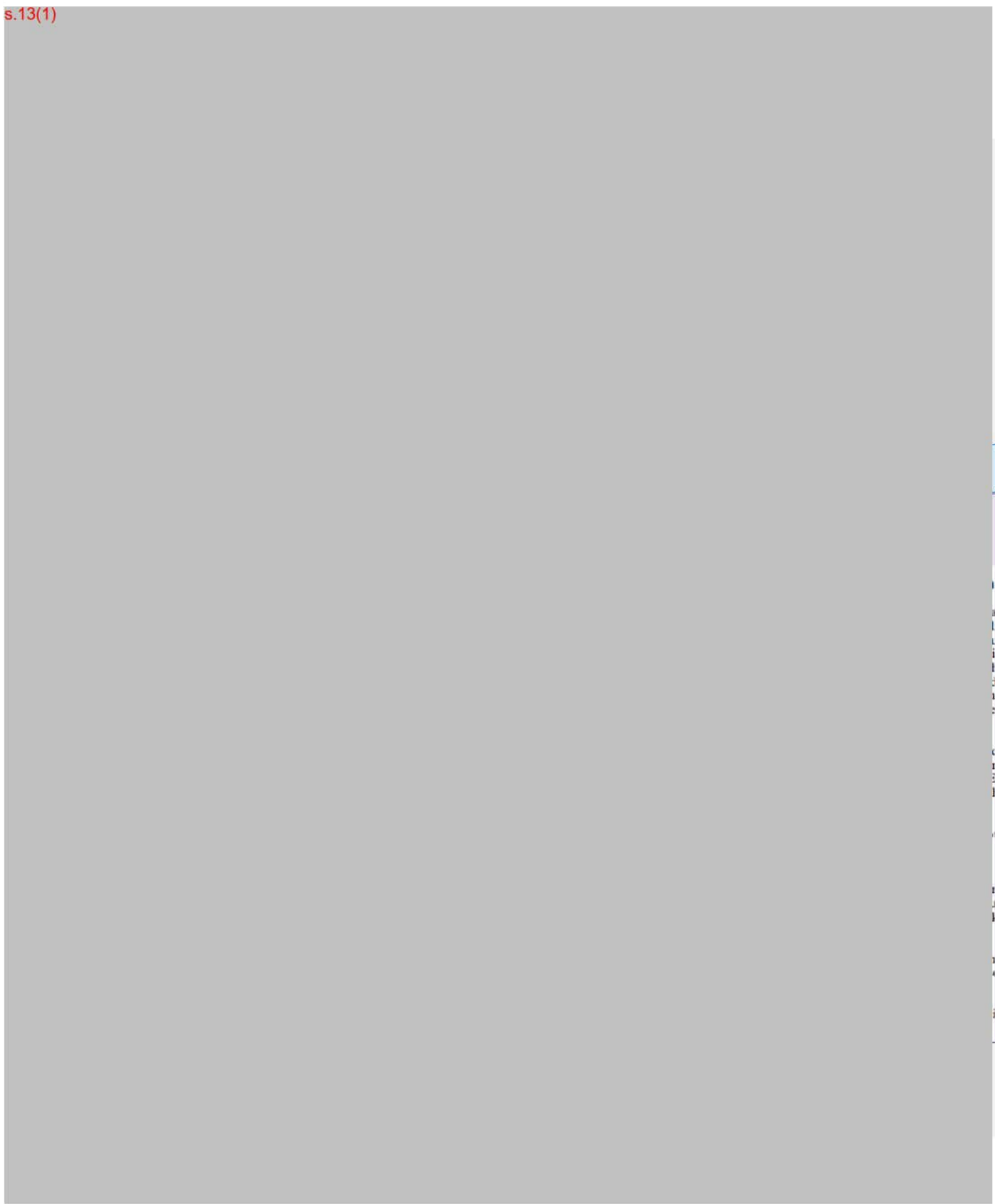


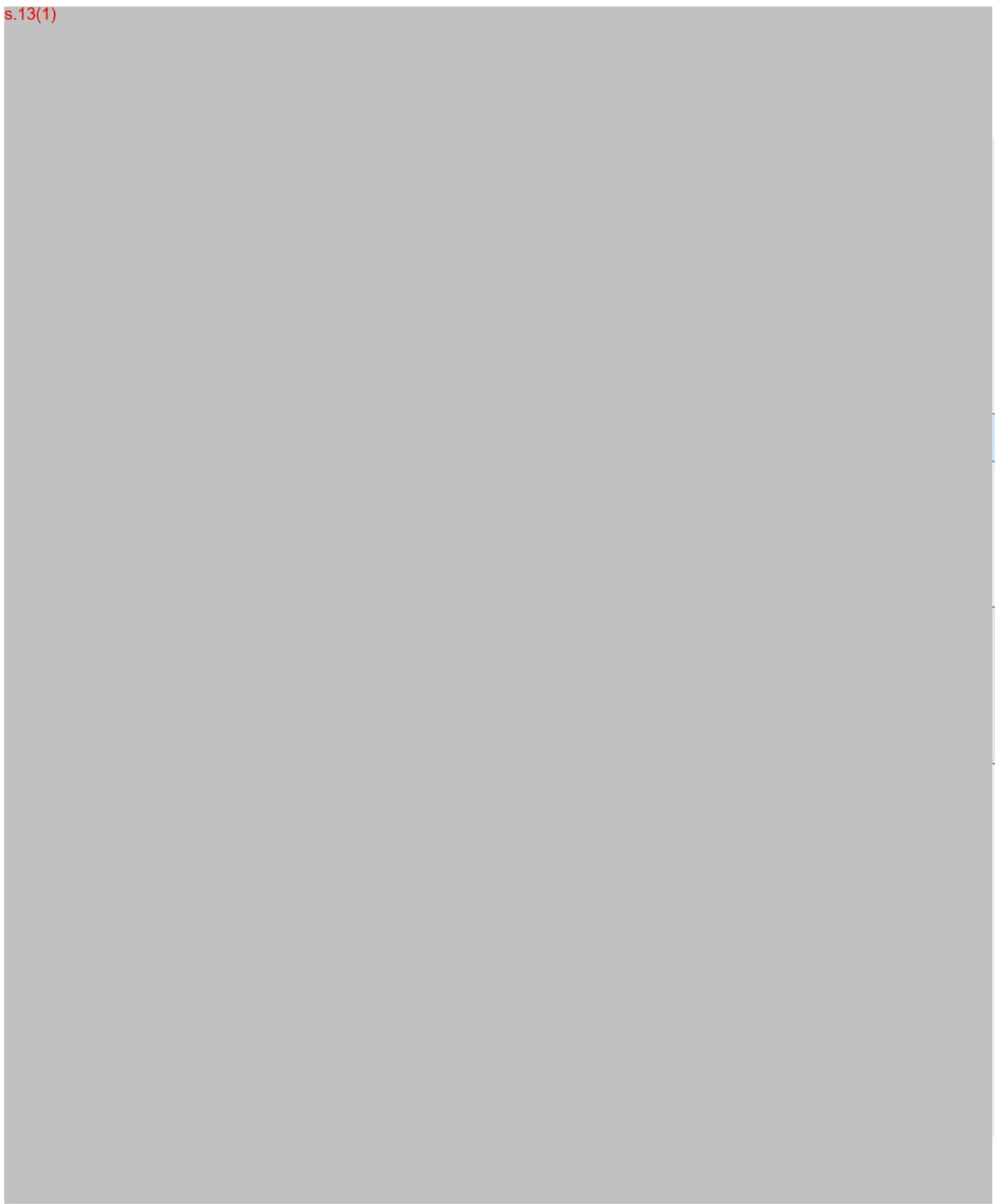


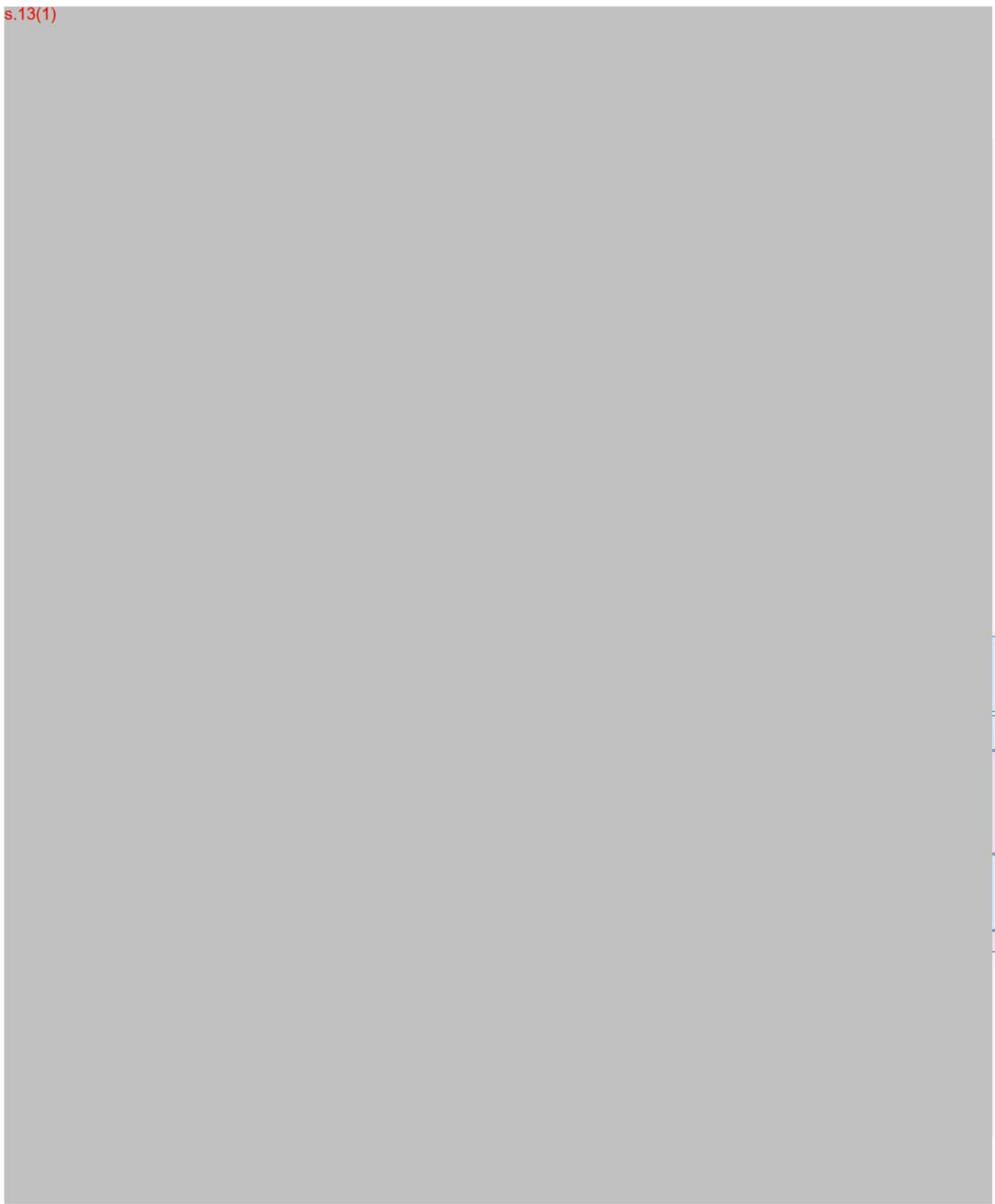


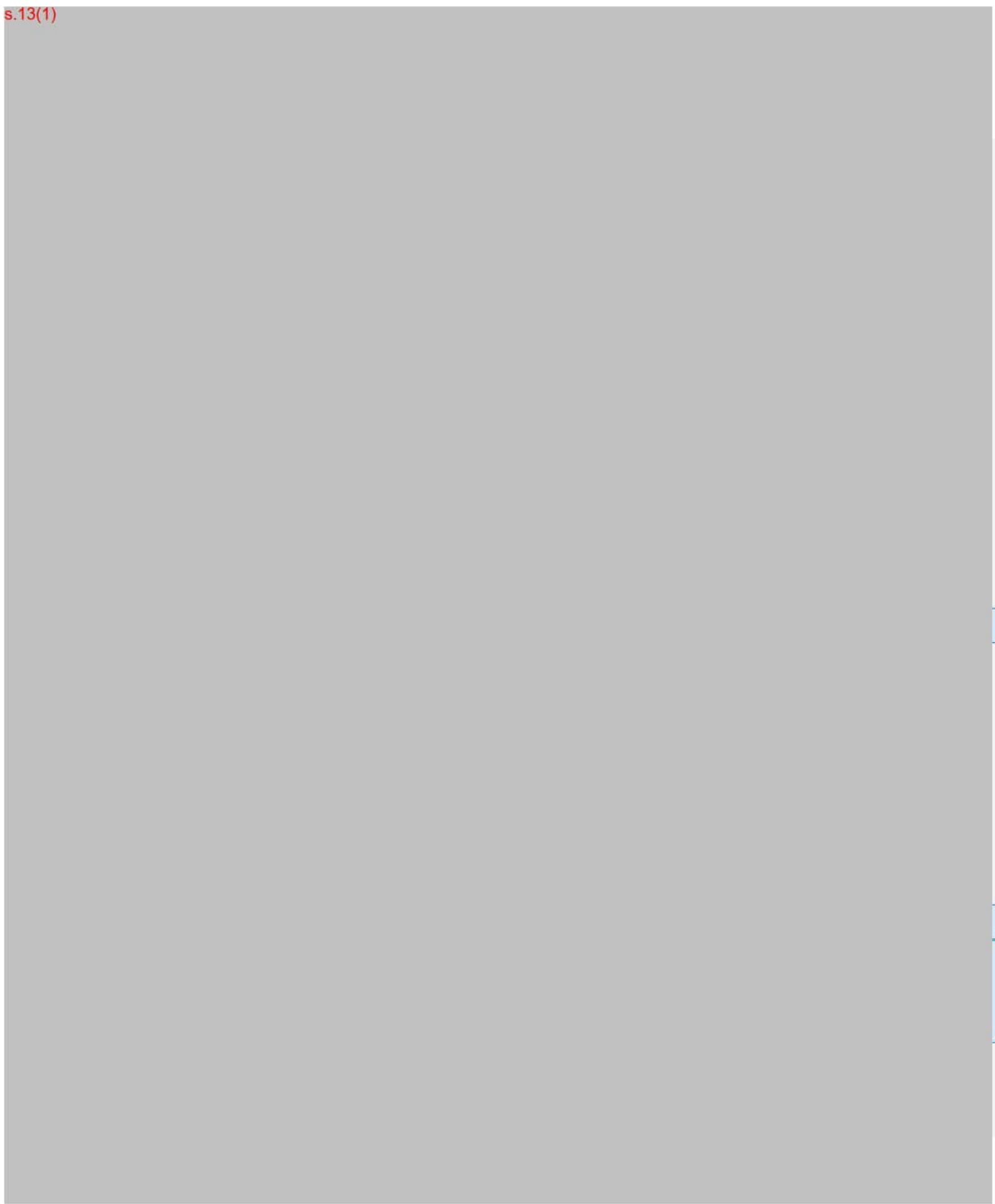


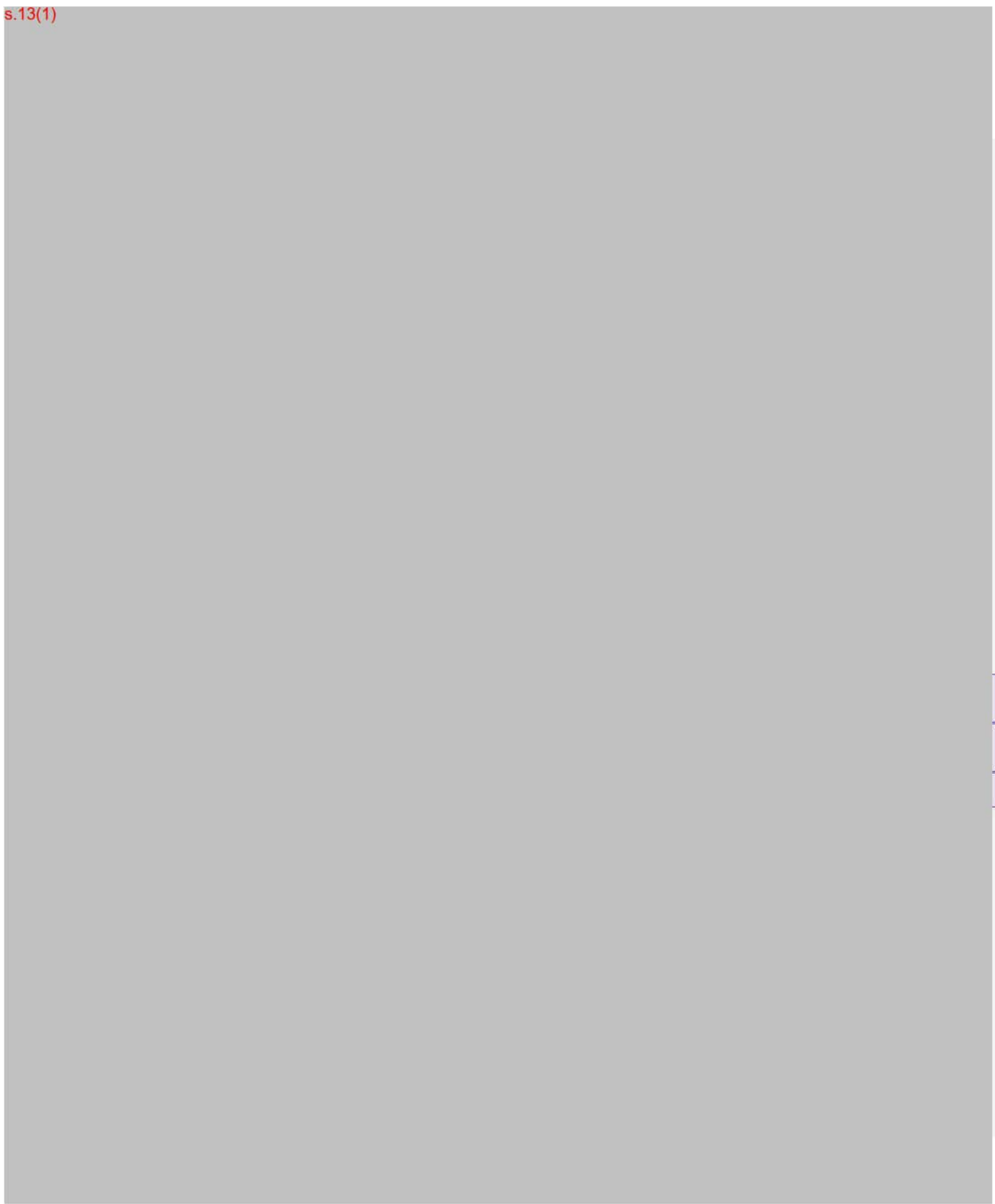


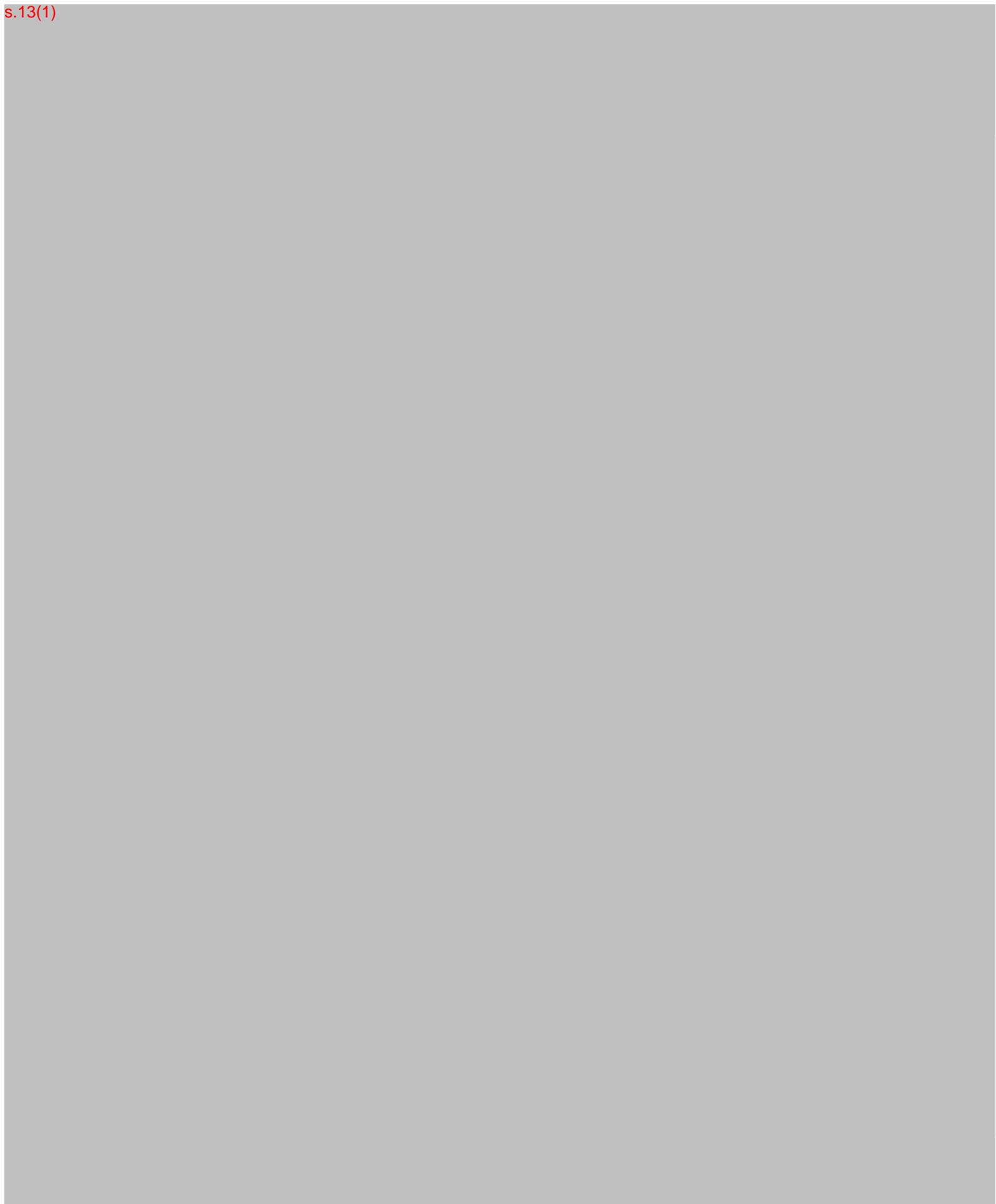


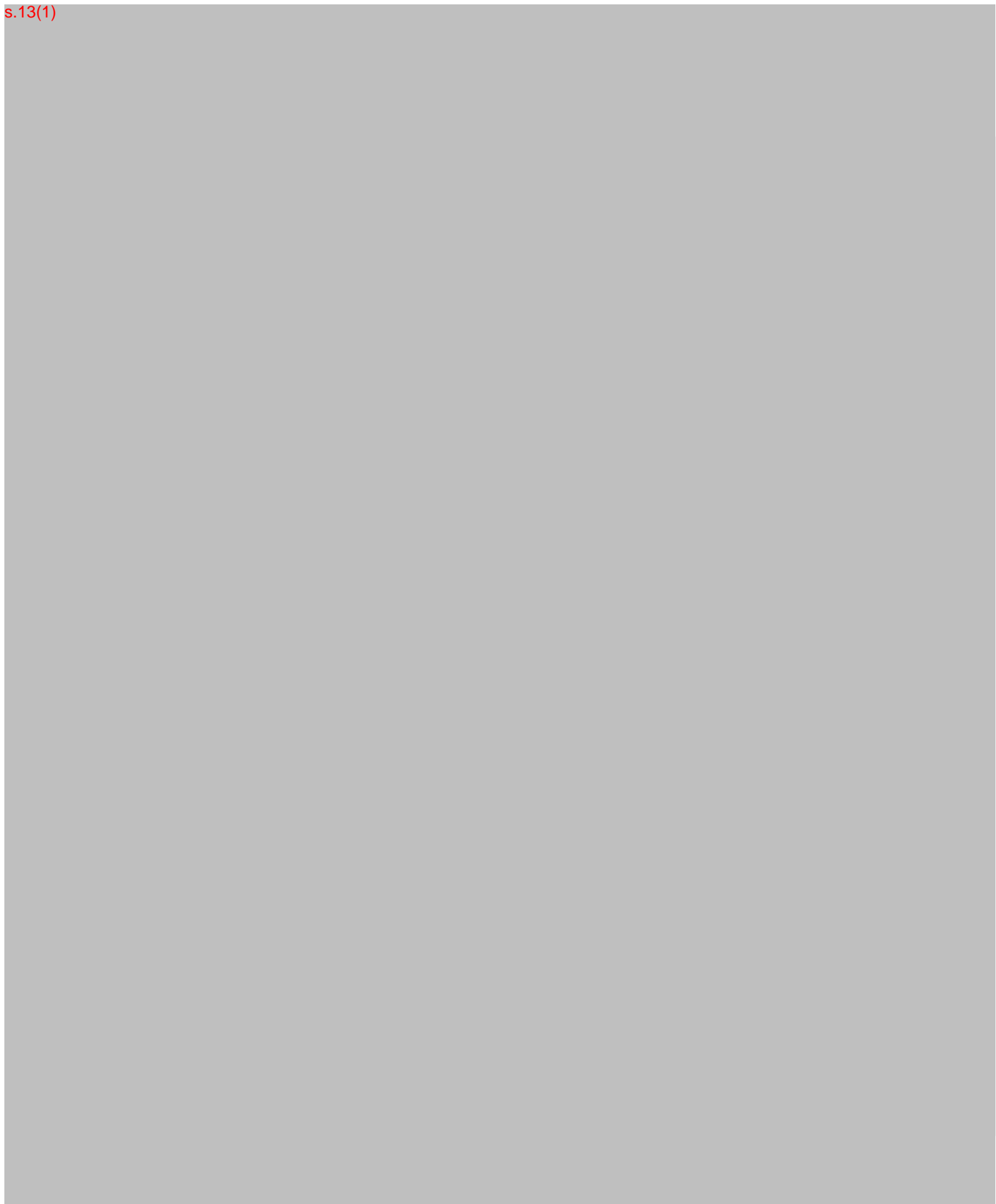


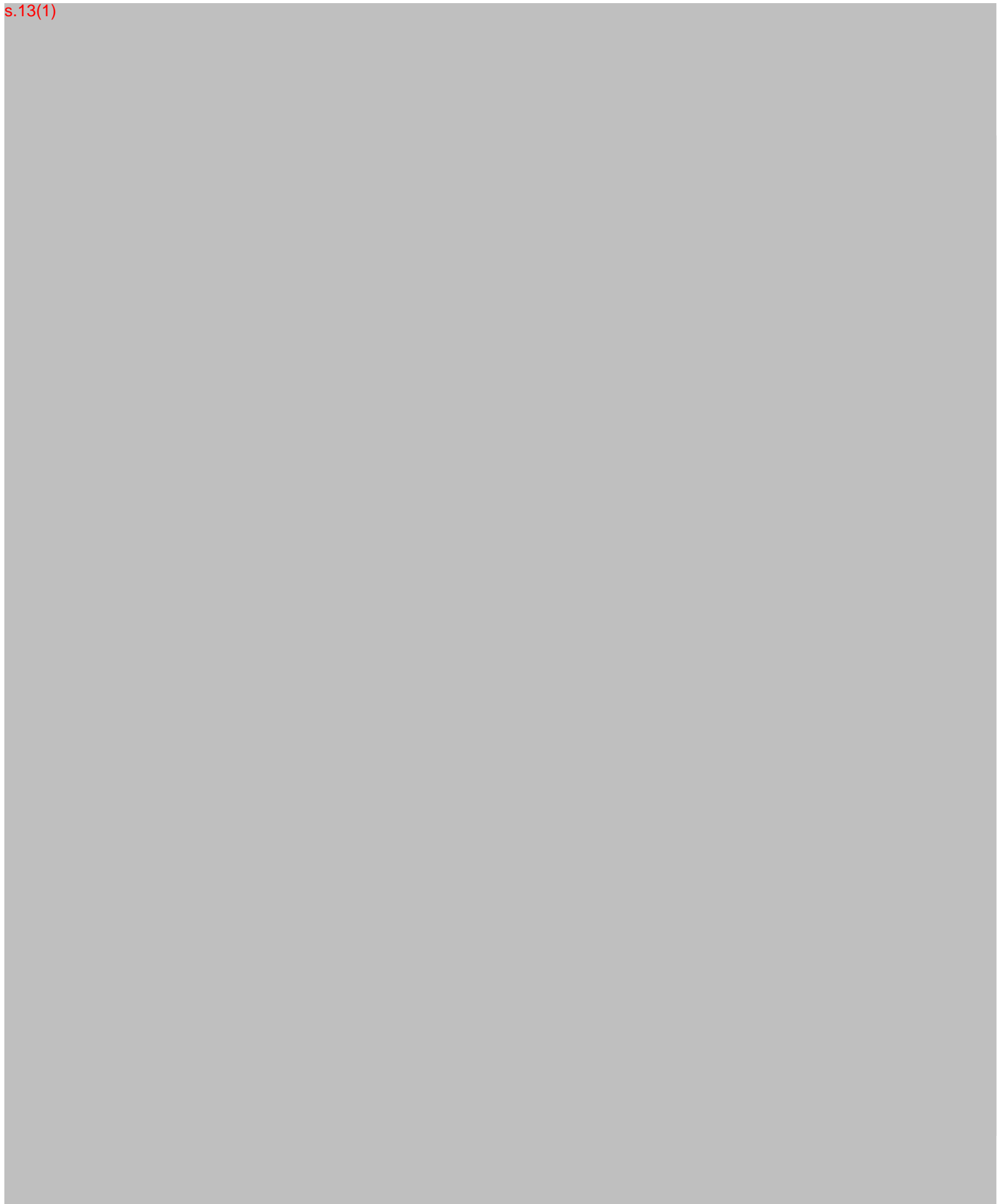


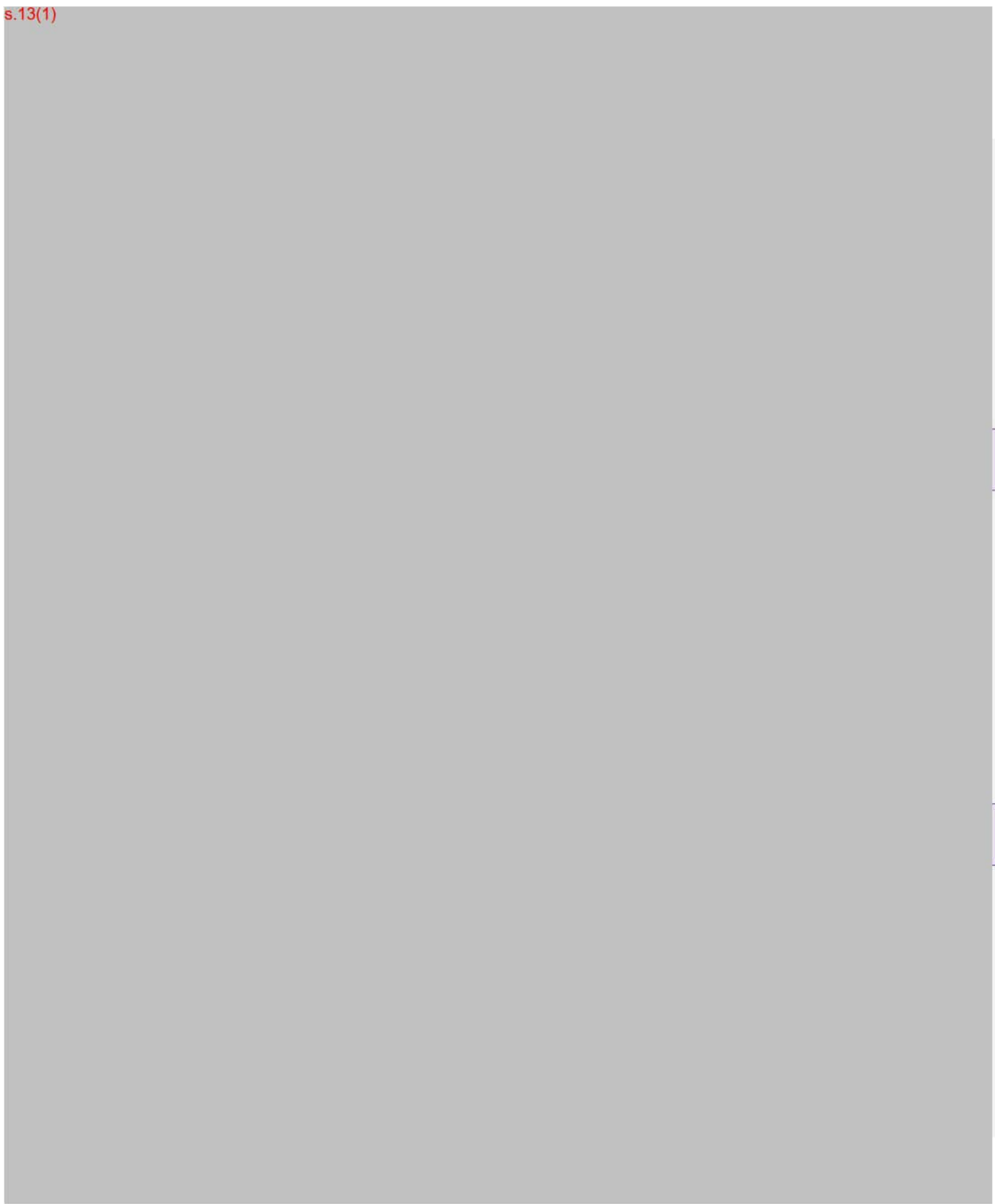


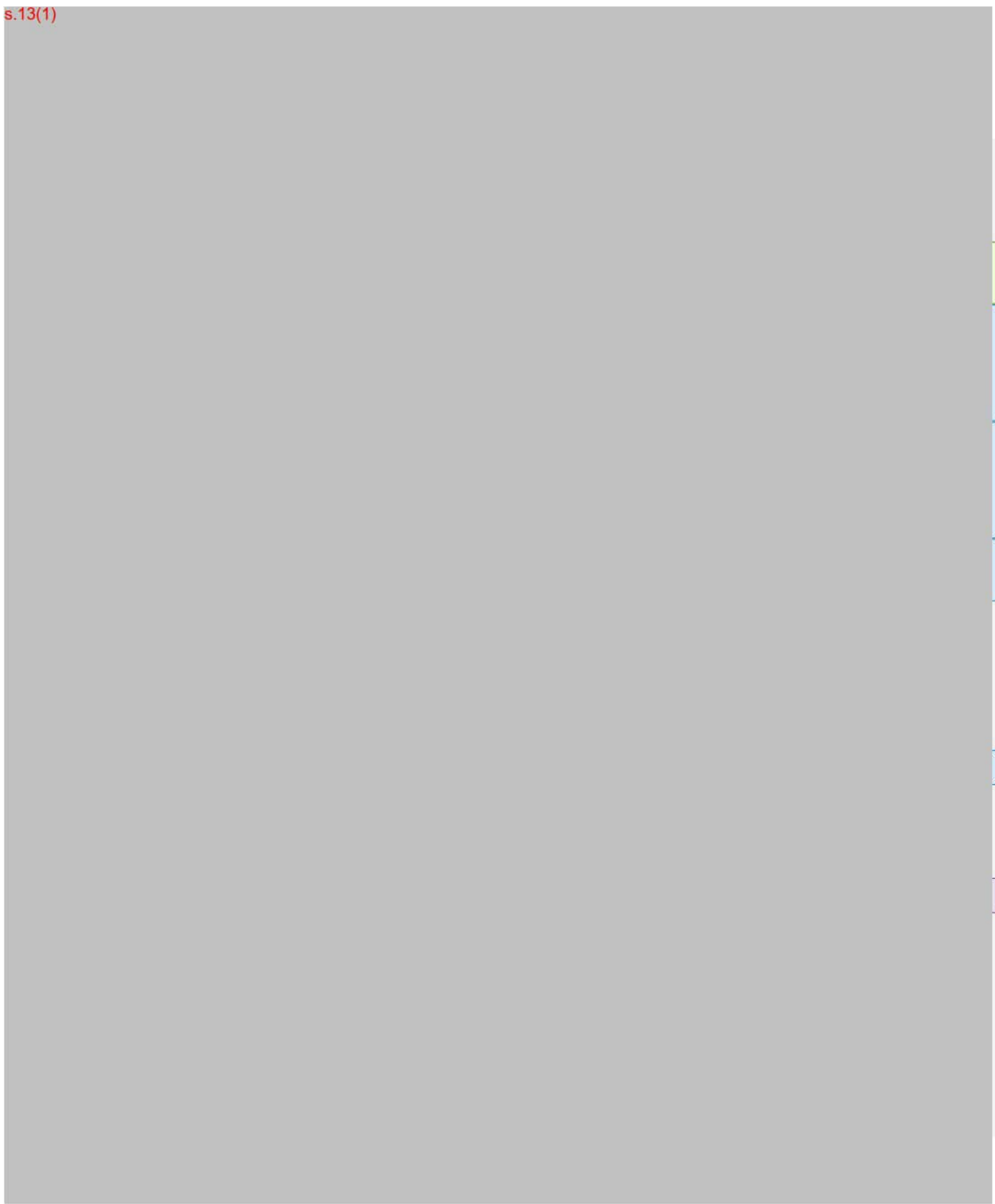


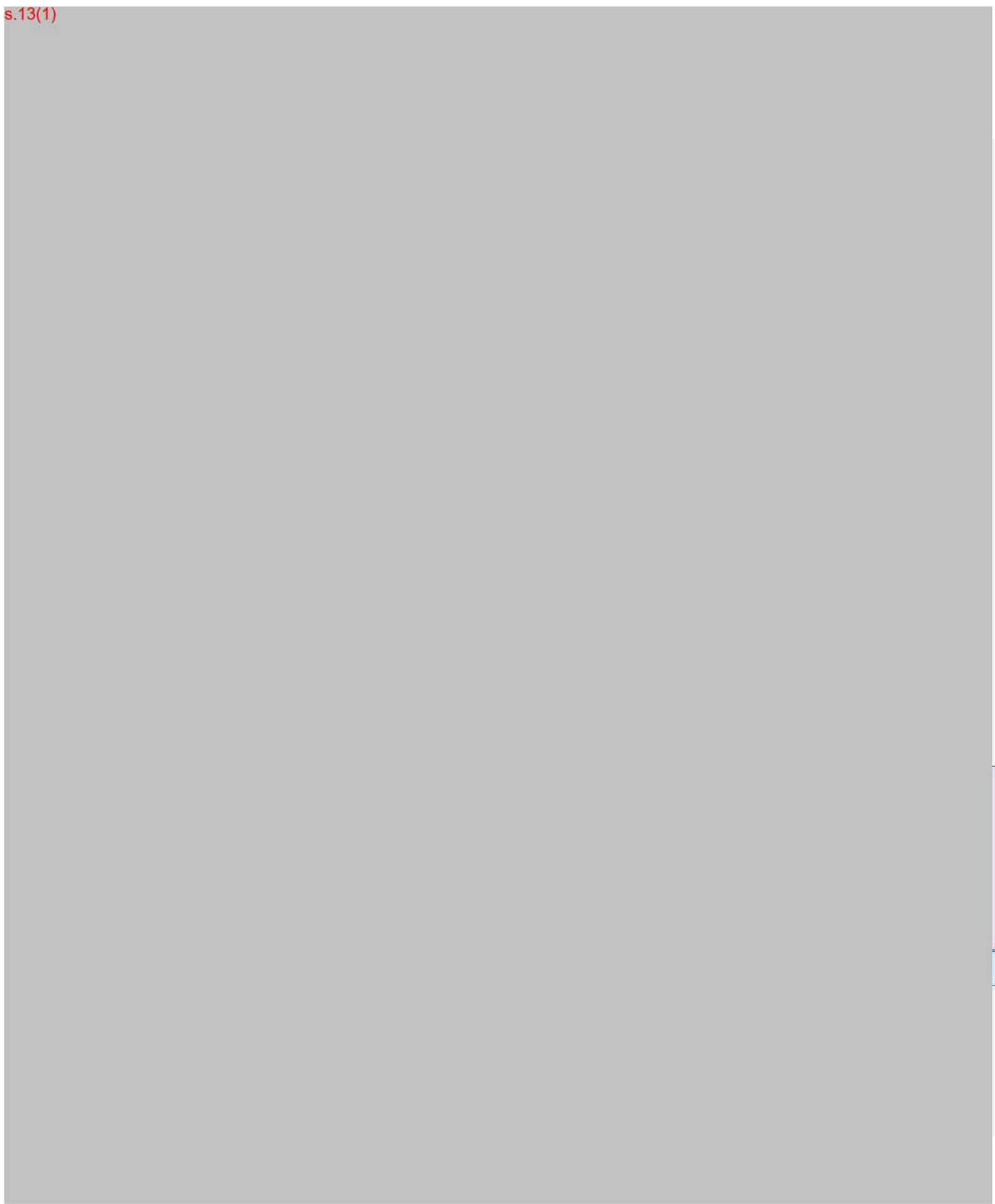


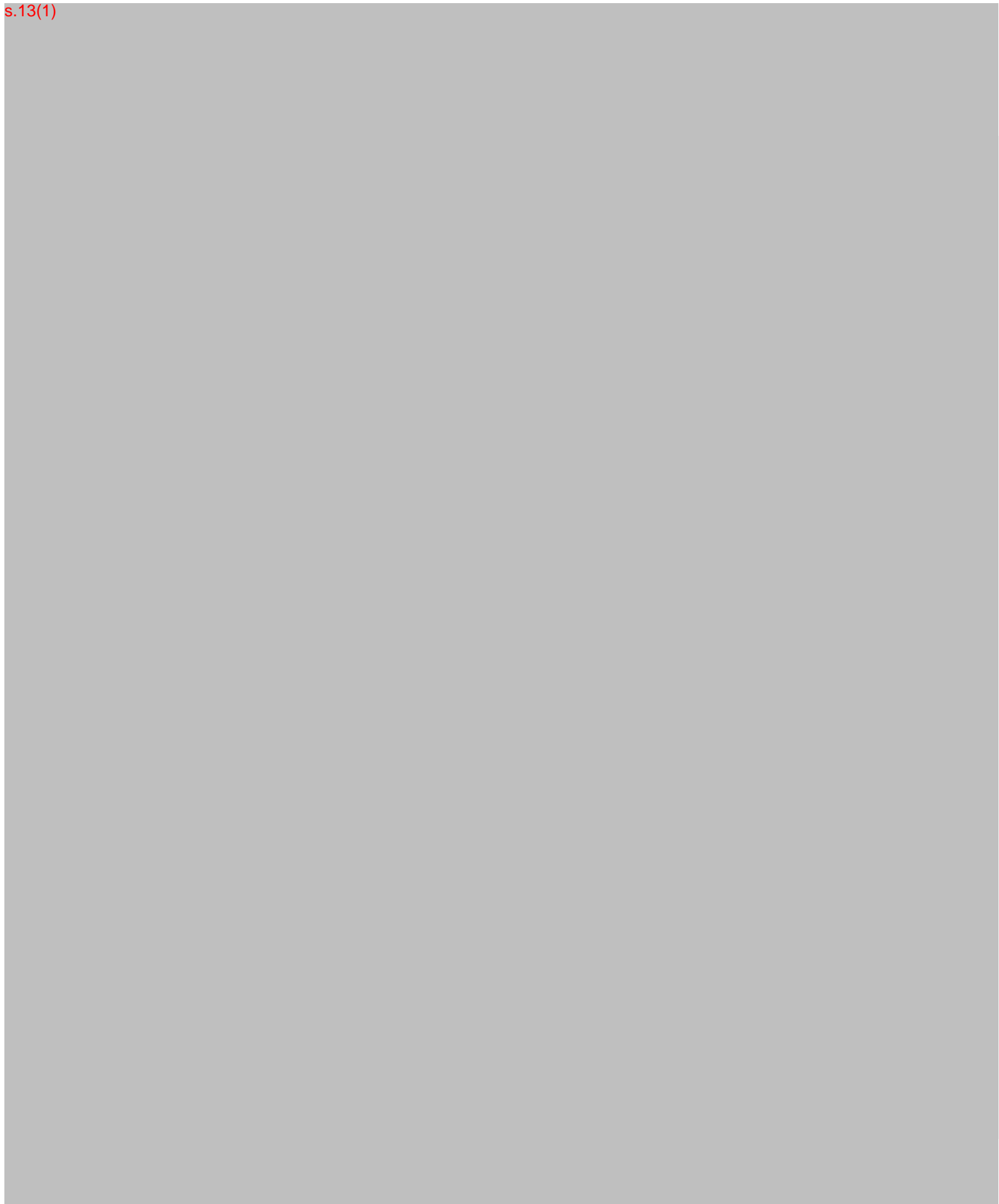


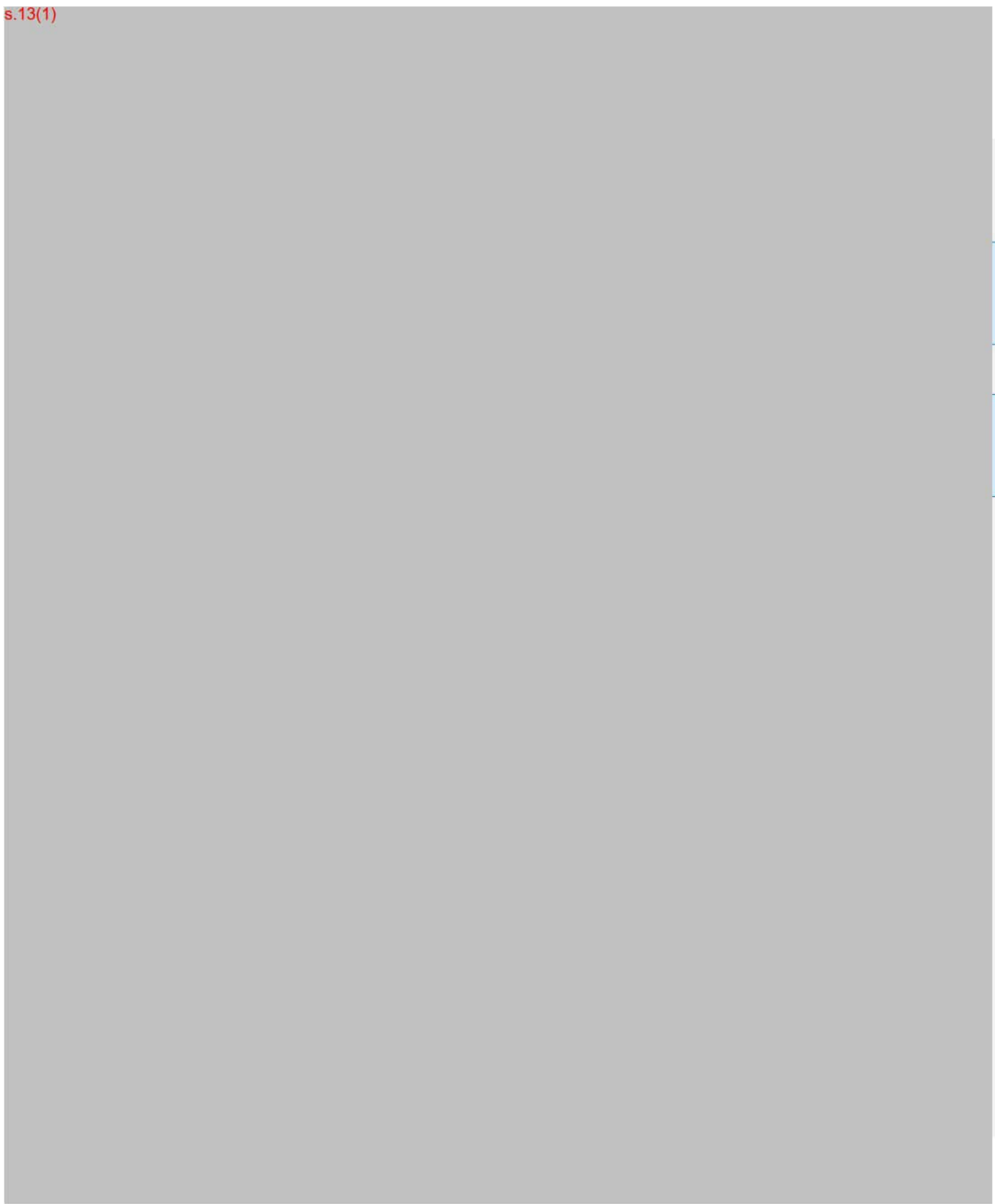


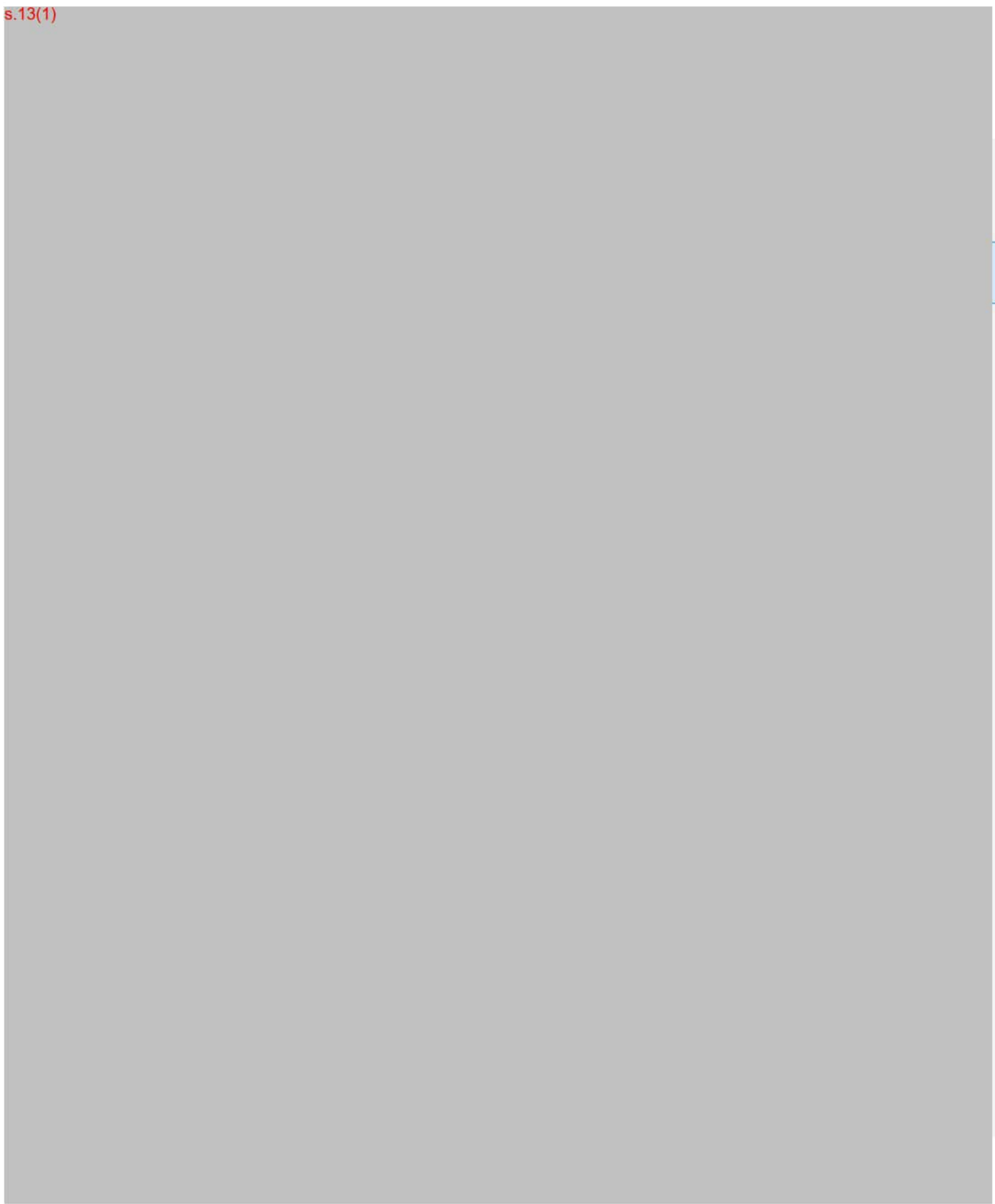


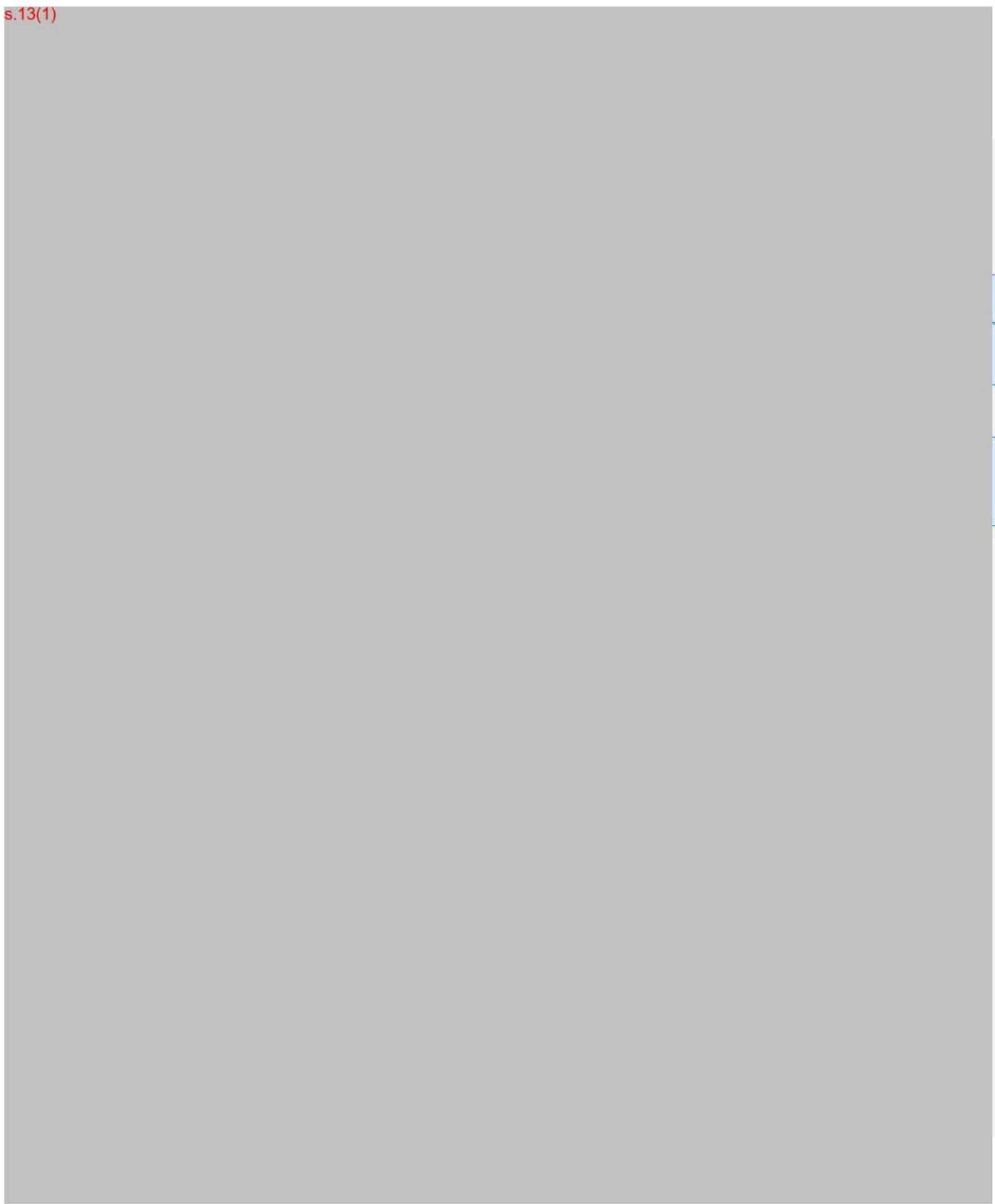


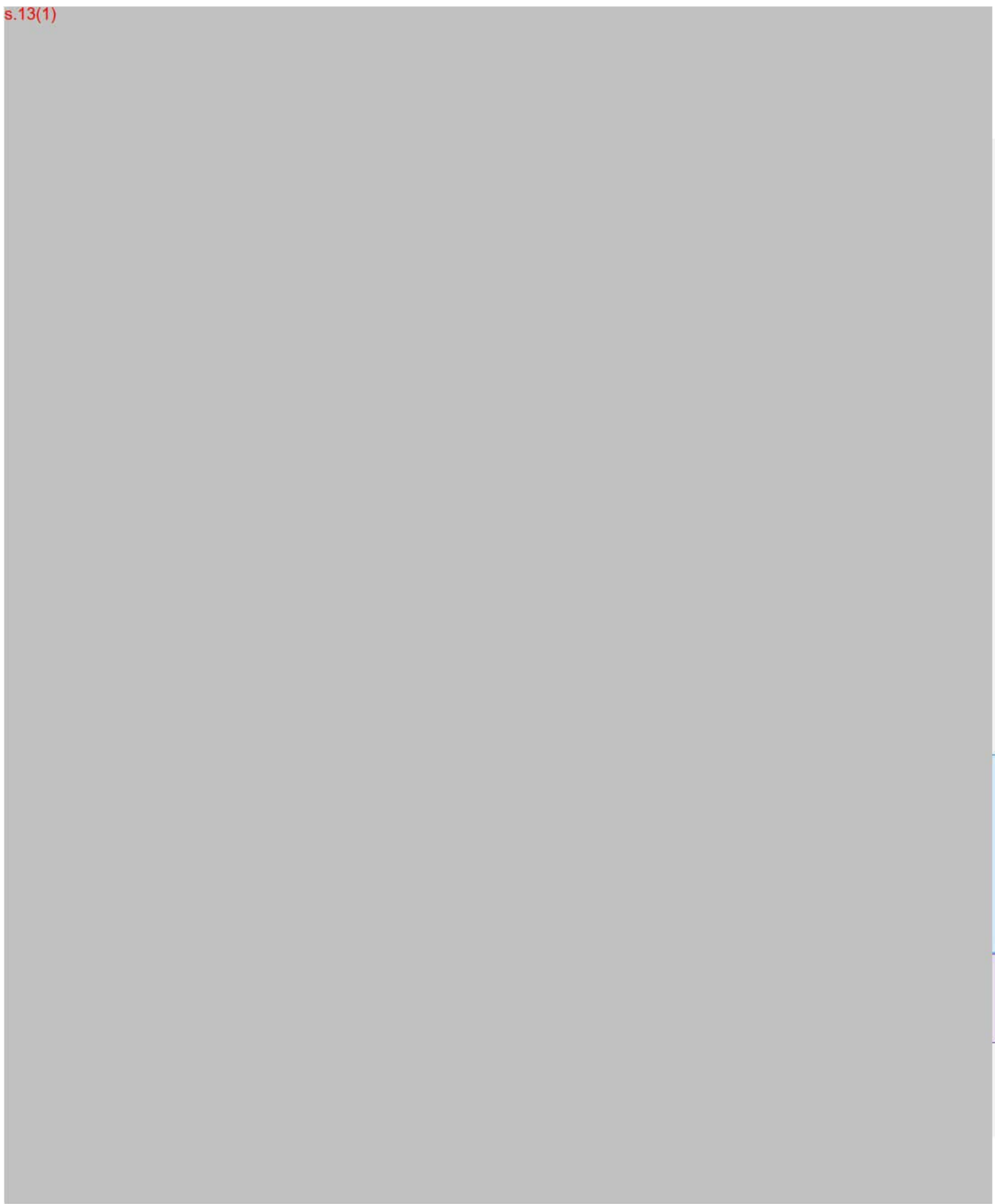


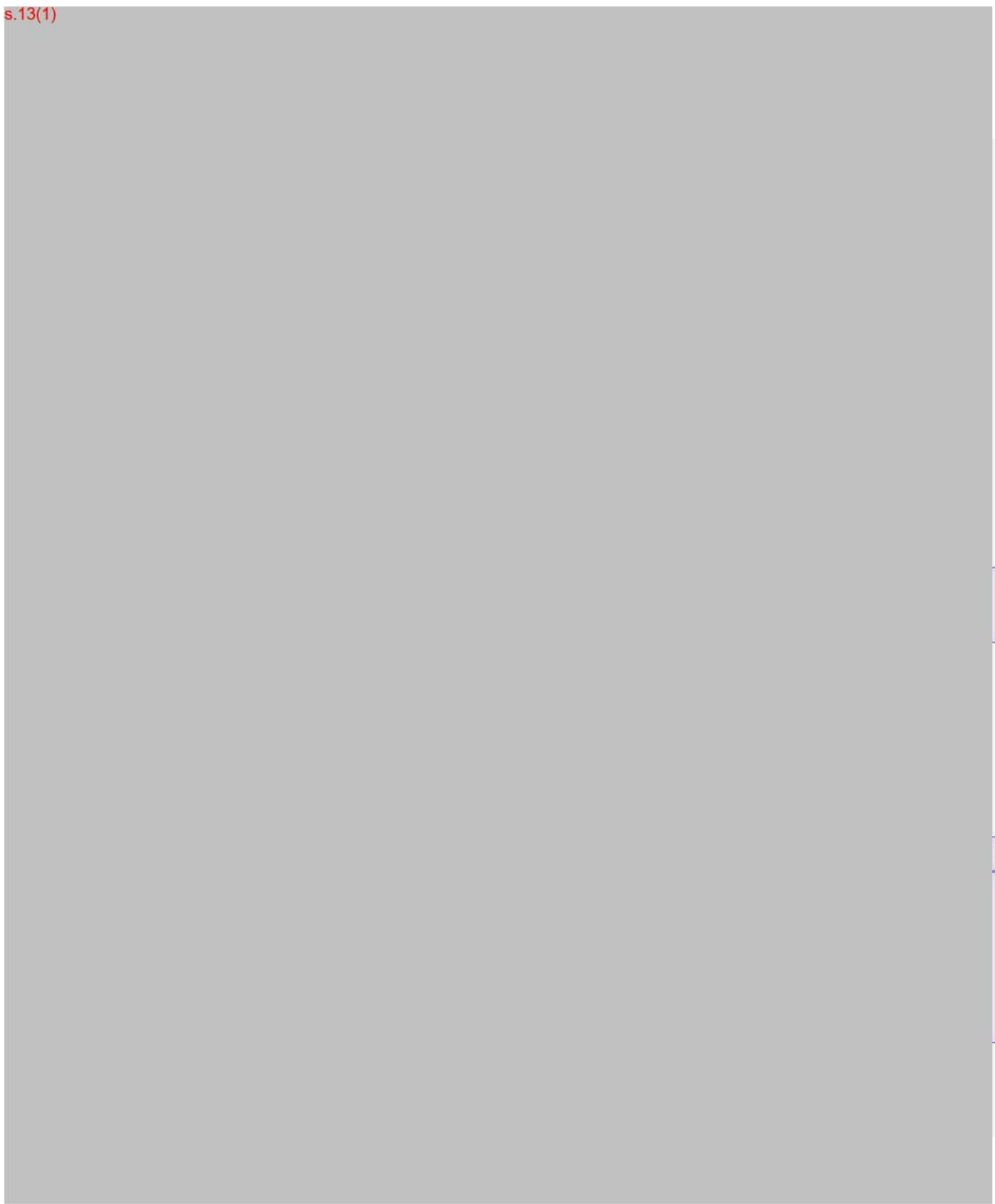




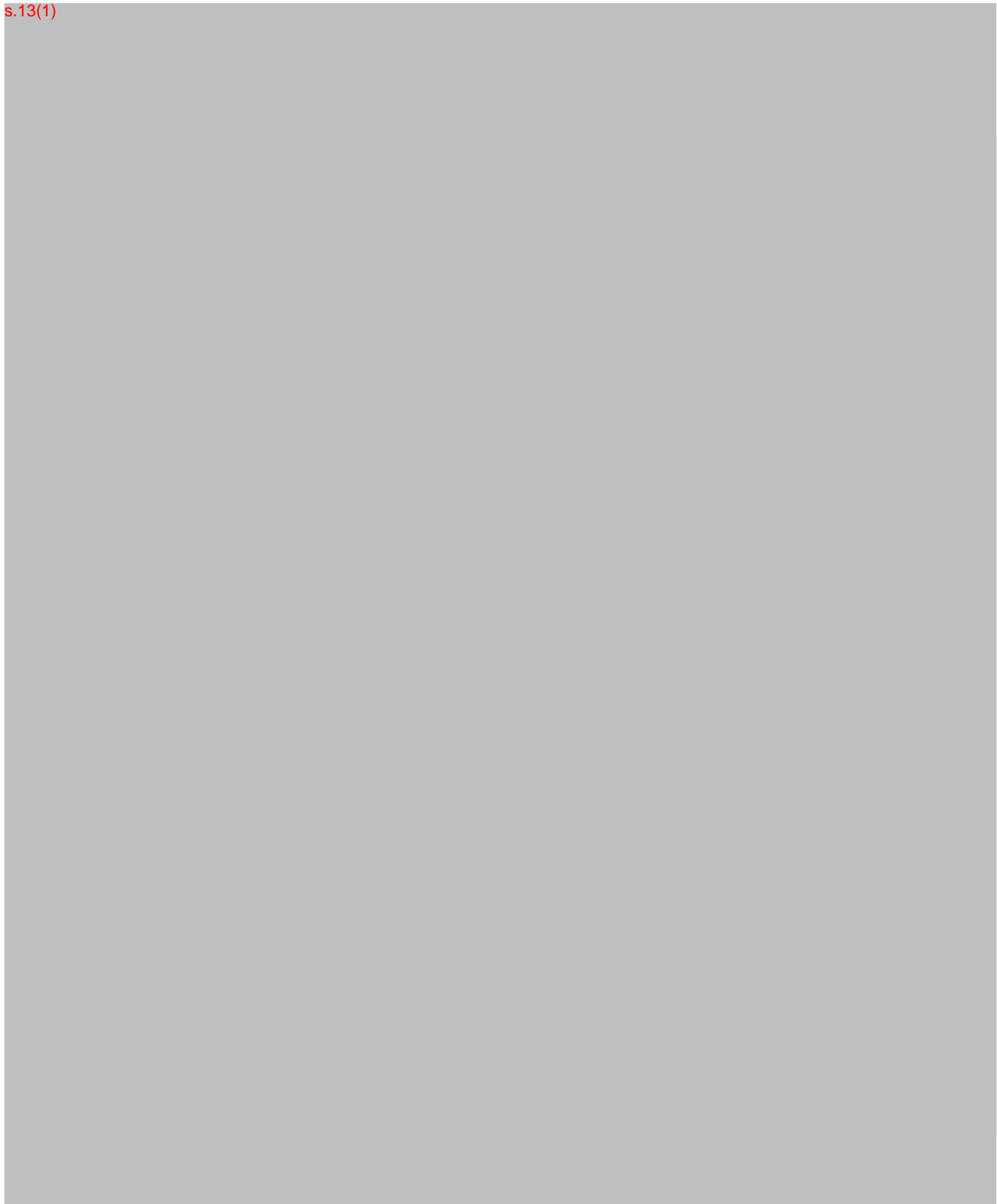


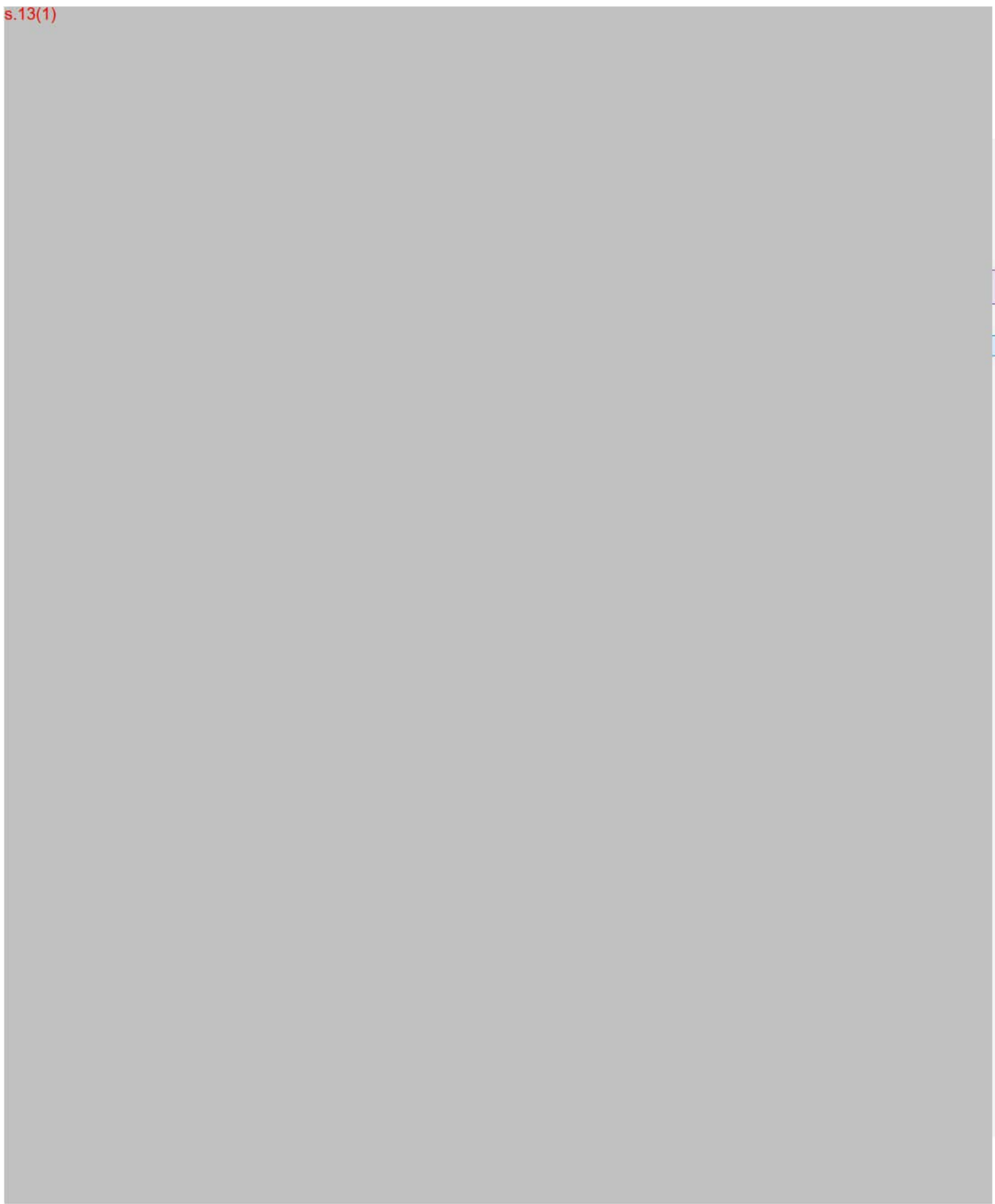


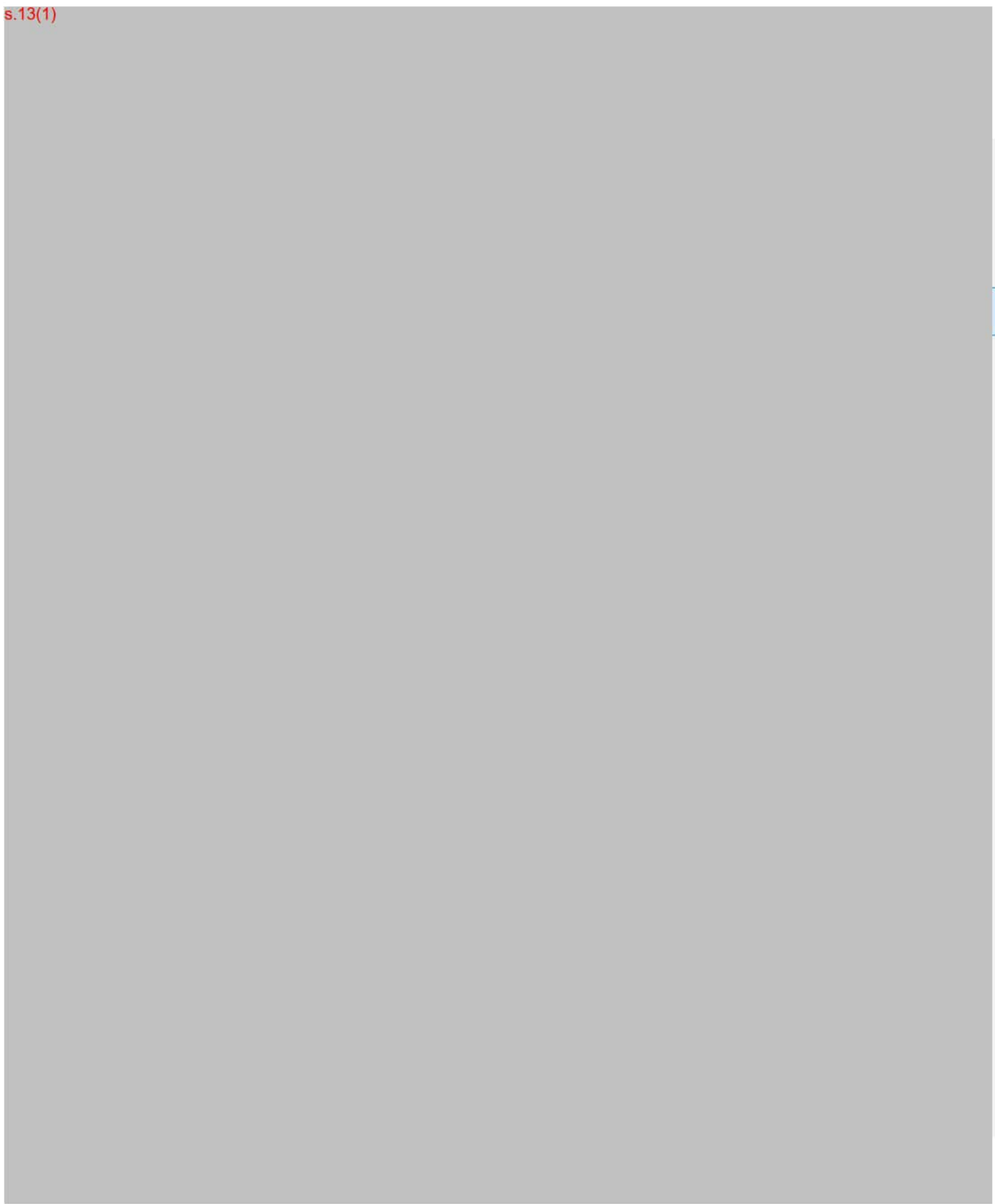












From: "Li, Charling" <charling.li@vancouver.ca>
To: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
CC: "Enright, Patrick" <Patrick.Enright@vancouver.ca>
Date: 1/22/2026 4:50:59 PM
Subject: RE: RFX Discussion - Energy Modelling Guidelines Update 2023
Attachments: PS20230002 - RFP (draft)_CL.doc

Hi Dino, please see the attached file for my changes for the RFP. I'm happy for this to go out as soon as you can 😊

Thanks,

Charling

From: Goundouvas, Dino
Sent: Monday, January 16, 2023 9:47 AM
To: Li, Charling
Cc: Enright, Patrick
Subject: RE: RFX Discussion - Energy Modelling Guidelines Update 2023

Hi Charling,

Please find the attached and draft RFP for your review prior to issuing to known proponents below. A couple questions for your feedback.

If you have any questions please let me know.

Thanks, Dino

From: Li, Charling <charling.li@vancouver.ca>
Sent: Wednesday, January 11, 2023 8:49 PM
To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Cc: Enright, Patrick <Patrick.Enright@vancouver.ca>
Subject: RE: RFX Discussion - Energy Modelling Guidelines Update 2023

Hi Dino, as discussed, attached is the final SOW, and here is the invitation list for the 3 firms:

- 1) Susan MacDougall susan@focaleng.com
- 2) kevin.leung@introba.com and ali.nazari@introba.com
- 3) bcoughlin@rdh.com and ecatania@rdh.com

Thank you!
Charling

-----Original Appointment-----

From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>

Sent: Wednesday, January 11, 2023 10:42 AM
To: Goundouvas, Dino; Li, Charling
Subject: RFX Discussion - Energy Modelling Guidelines Update 2023
When: Wednesday, January 11, 2023 1:30 PM-2:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Hi Charling,

Hopefully we can connect for a quick meeting to discuss the Energy Modelling Guidelines Update 2023 RFP.

Thanks, Dino

Microsoft Teams meeting

Join on your computer, mobile app or room device

[Click here to join the meeting](#)

Meeting ID: **s.15(1)(l)**

Passcode: **s.15(1)(l)**

[Download Teams](#) | [Join on the web](#)

Or call in (audio only)

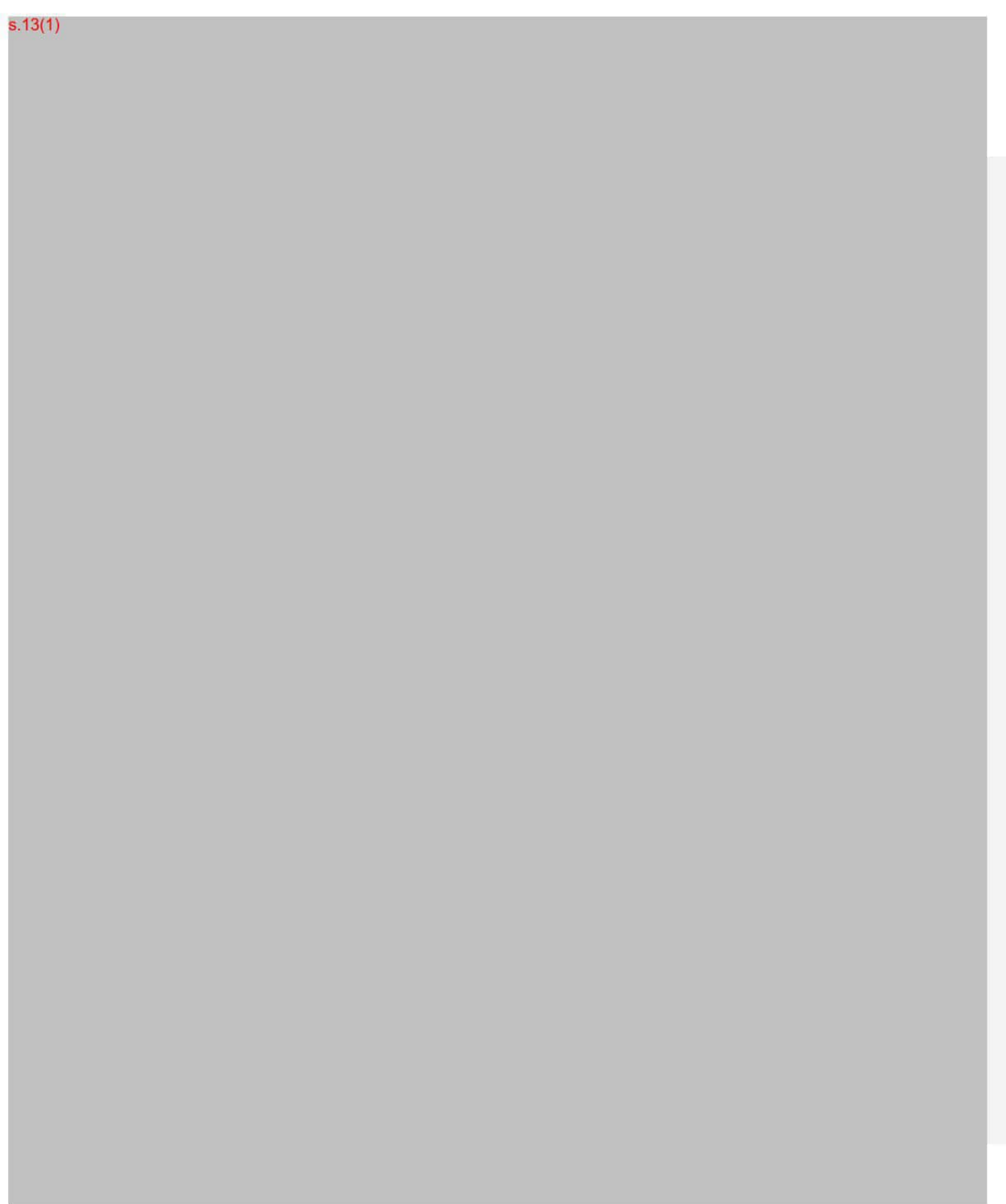
+1 604-665-6000, **s.15(1)(l)** Canada, Vancouver

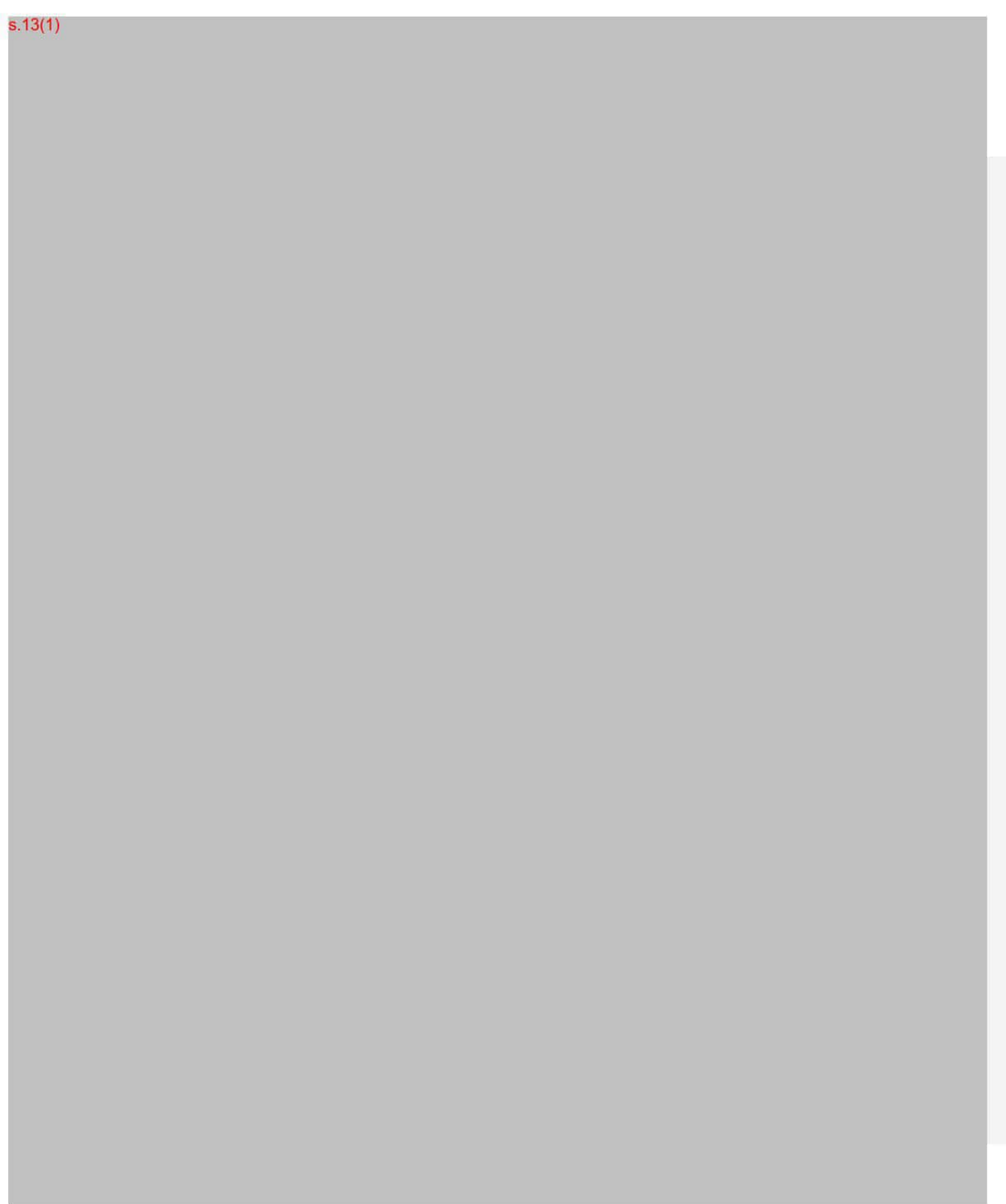
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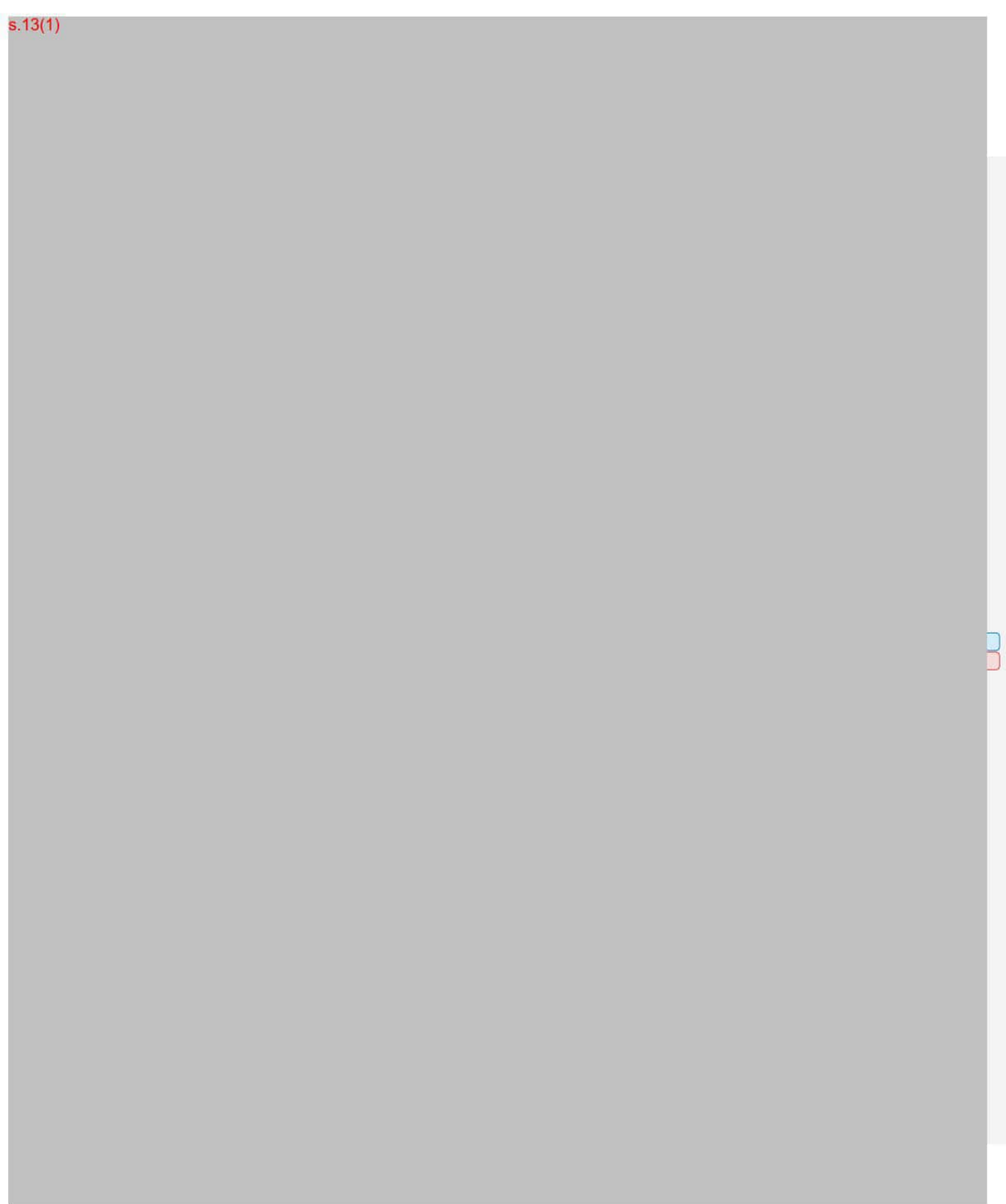
[Find a local number](#) | [Reset PIN](#)

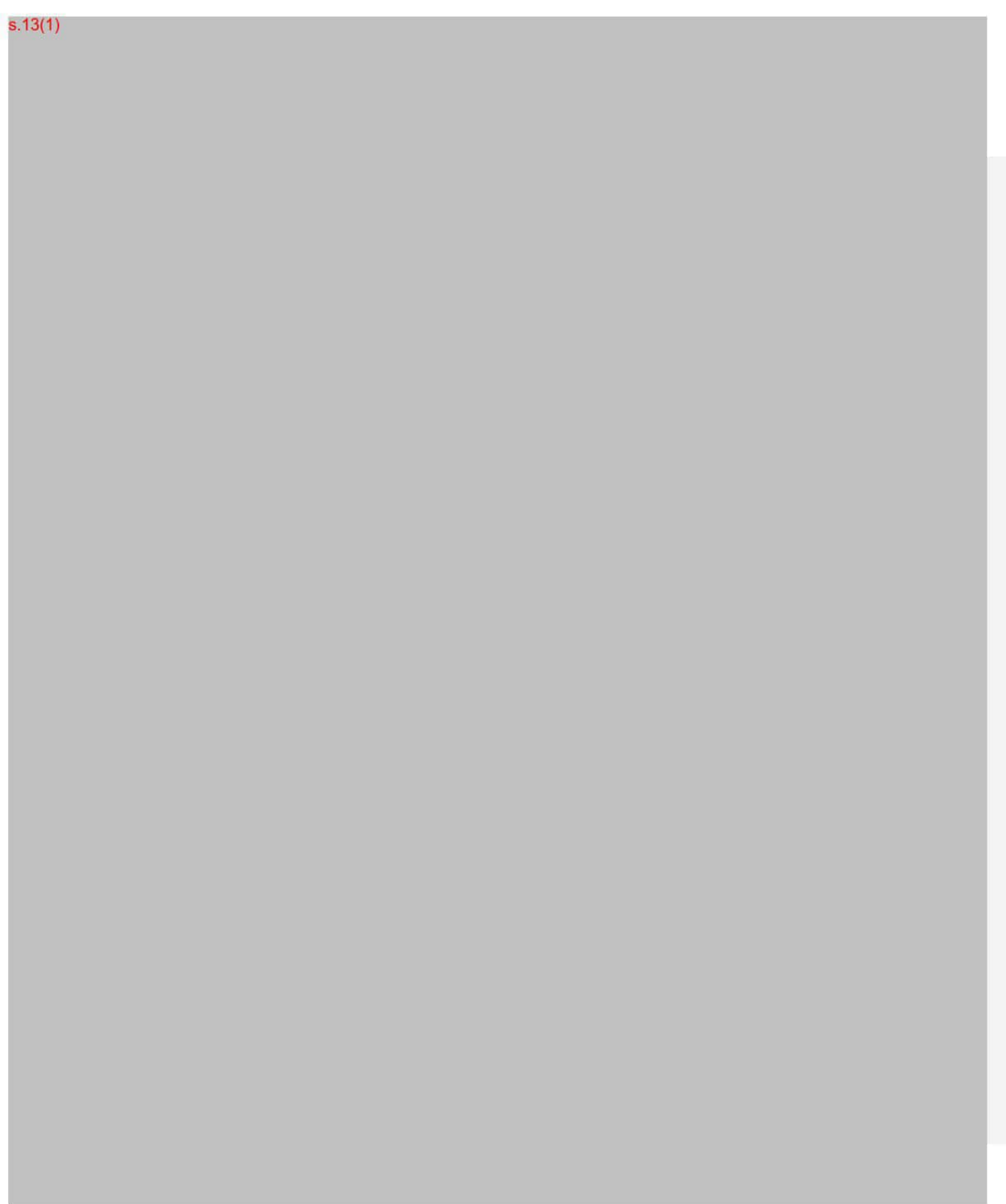
Personal Information collected via MS365 Teams Mtgs will be used by the City of Vancouver for managing mtg attendance and collaboration under the authority of s.26(c) of FIPPA. Questions may be emailed to the Director, ATIP, privacy@vancouver.ca

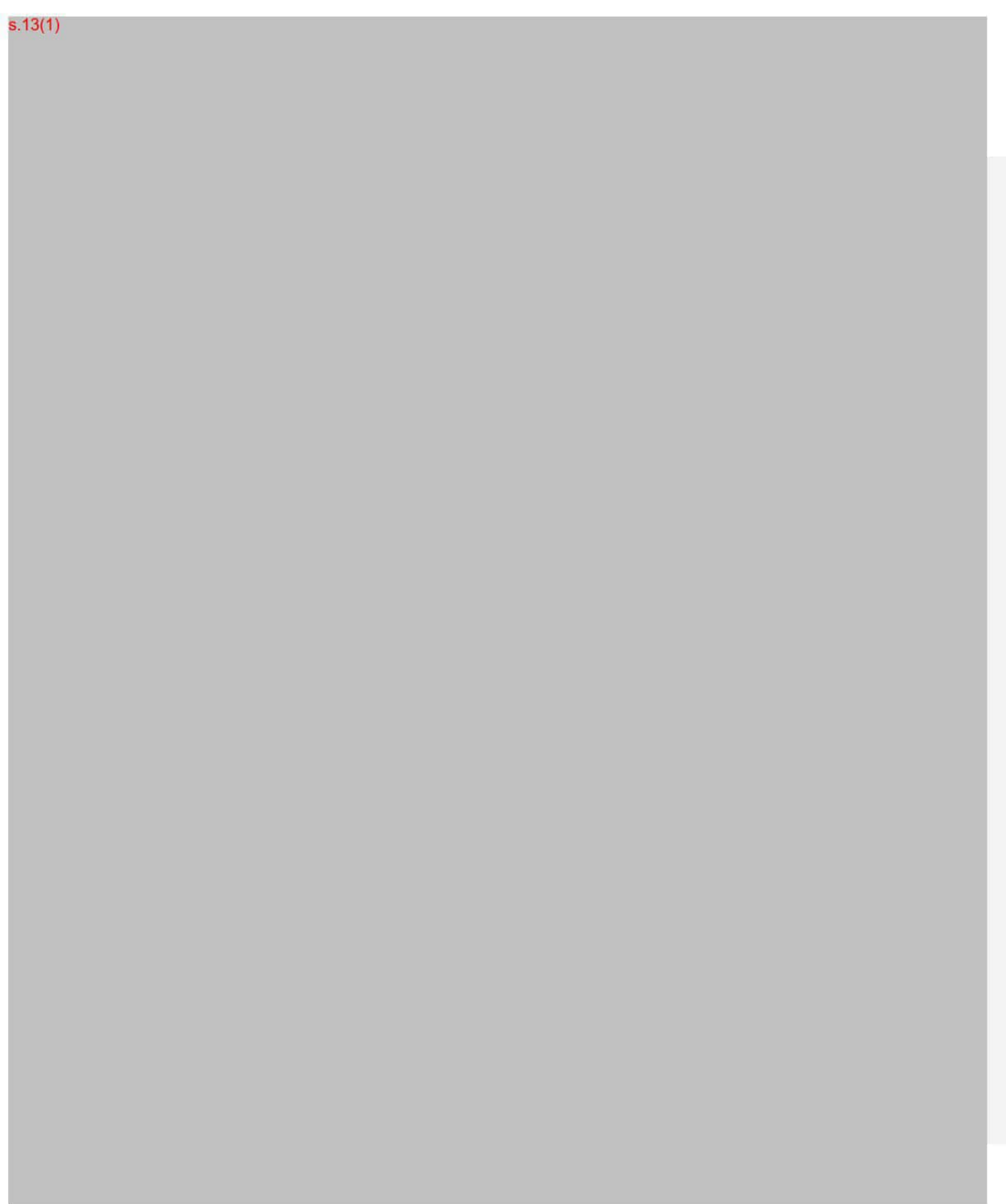
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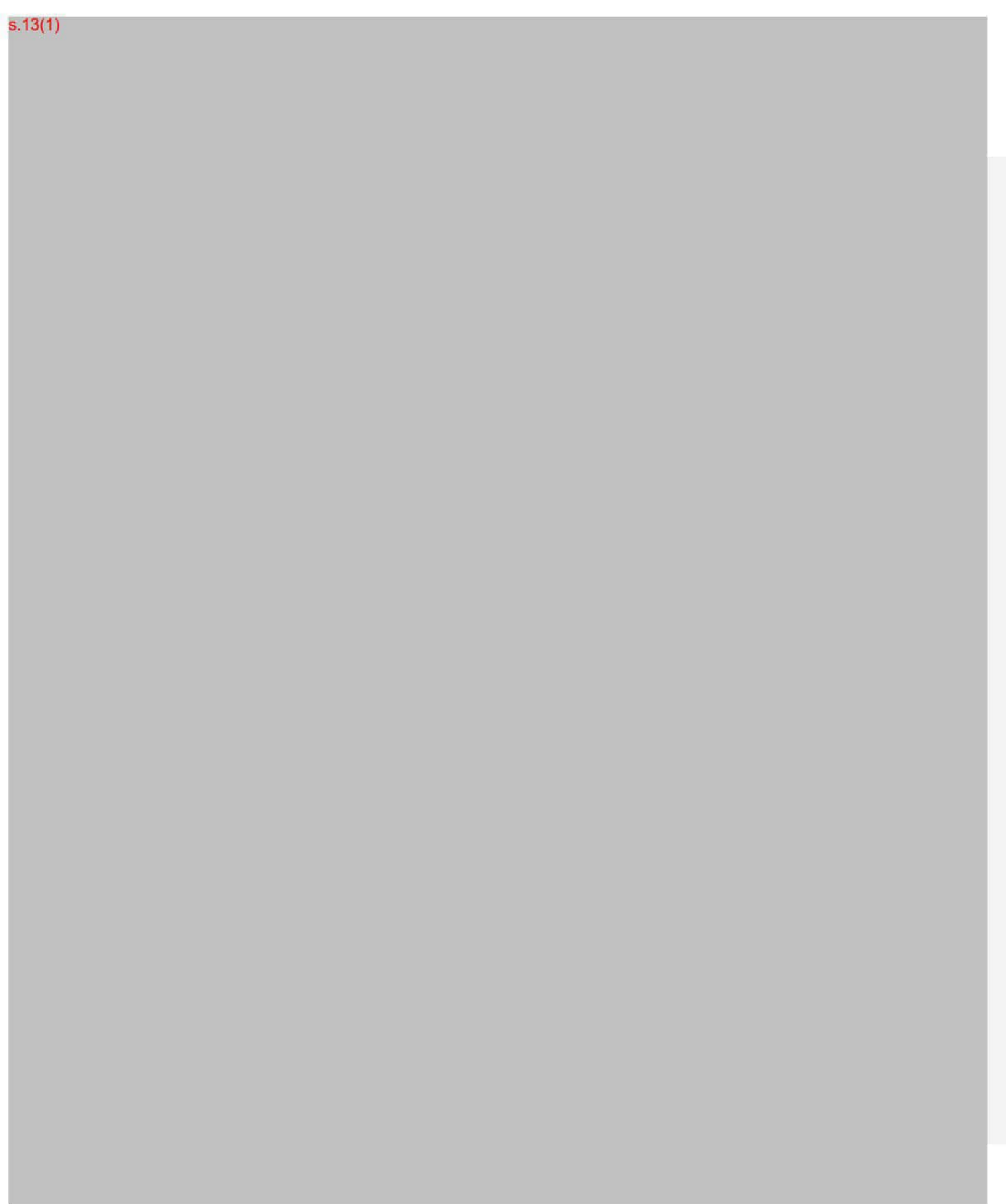


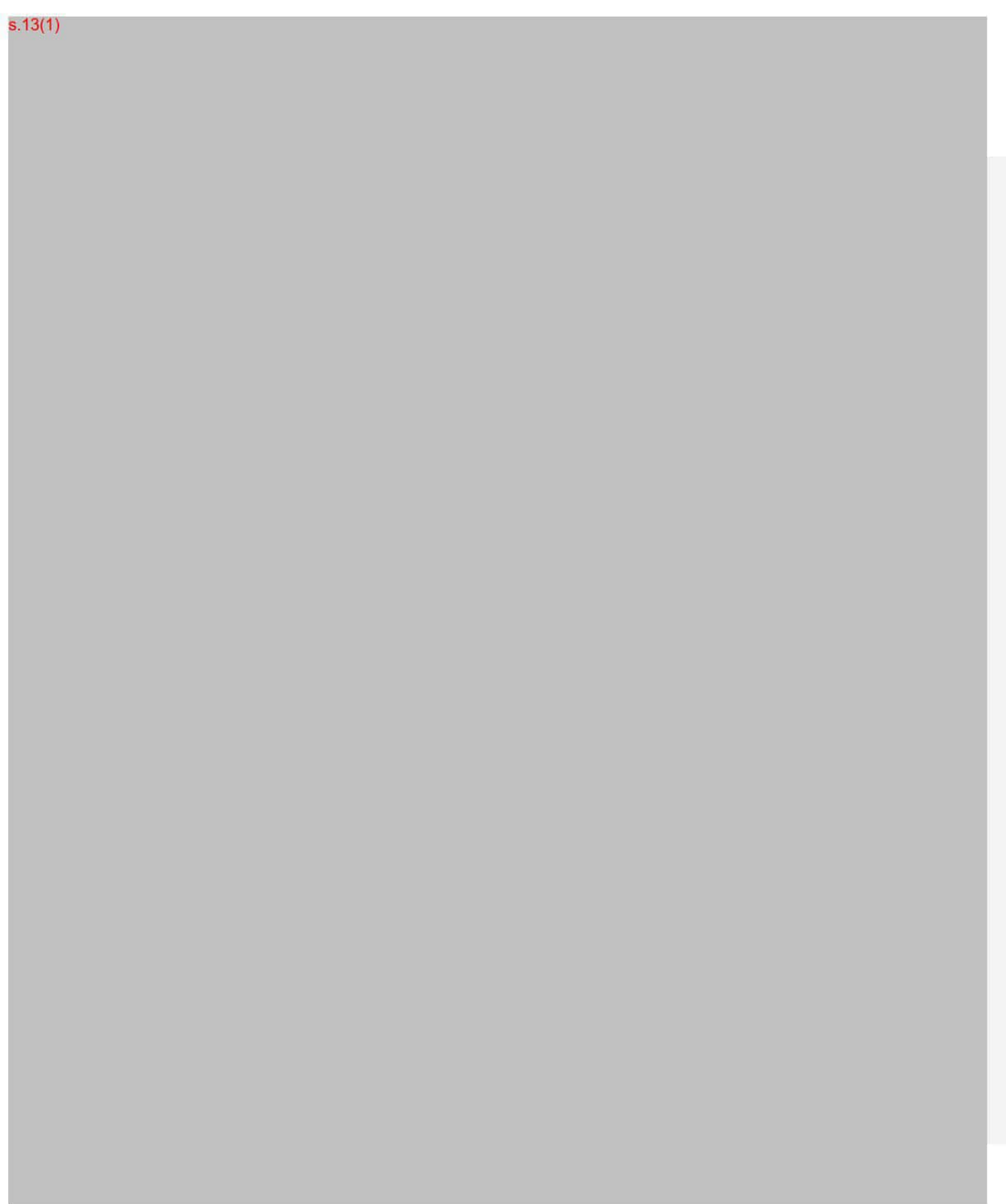


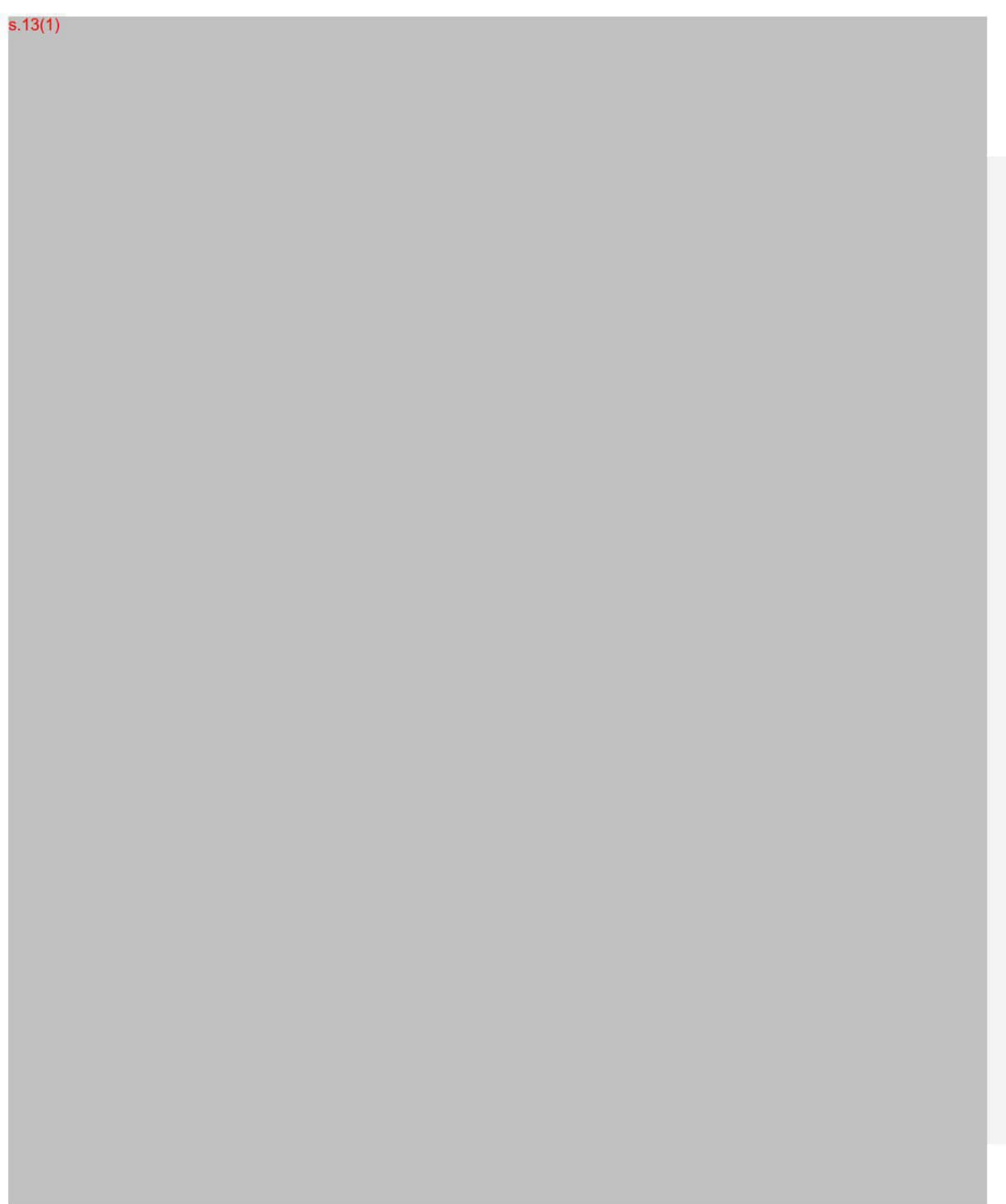


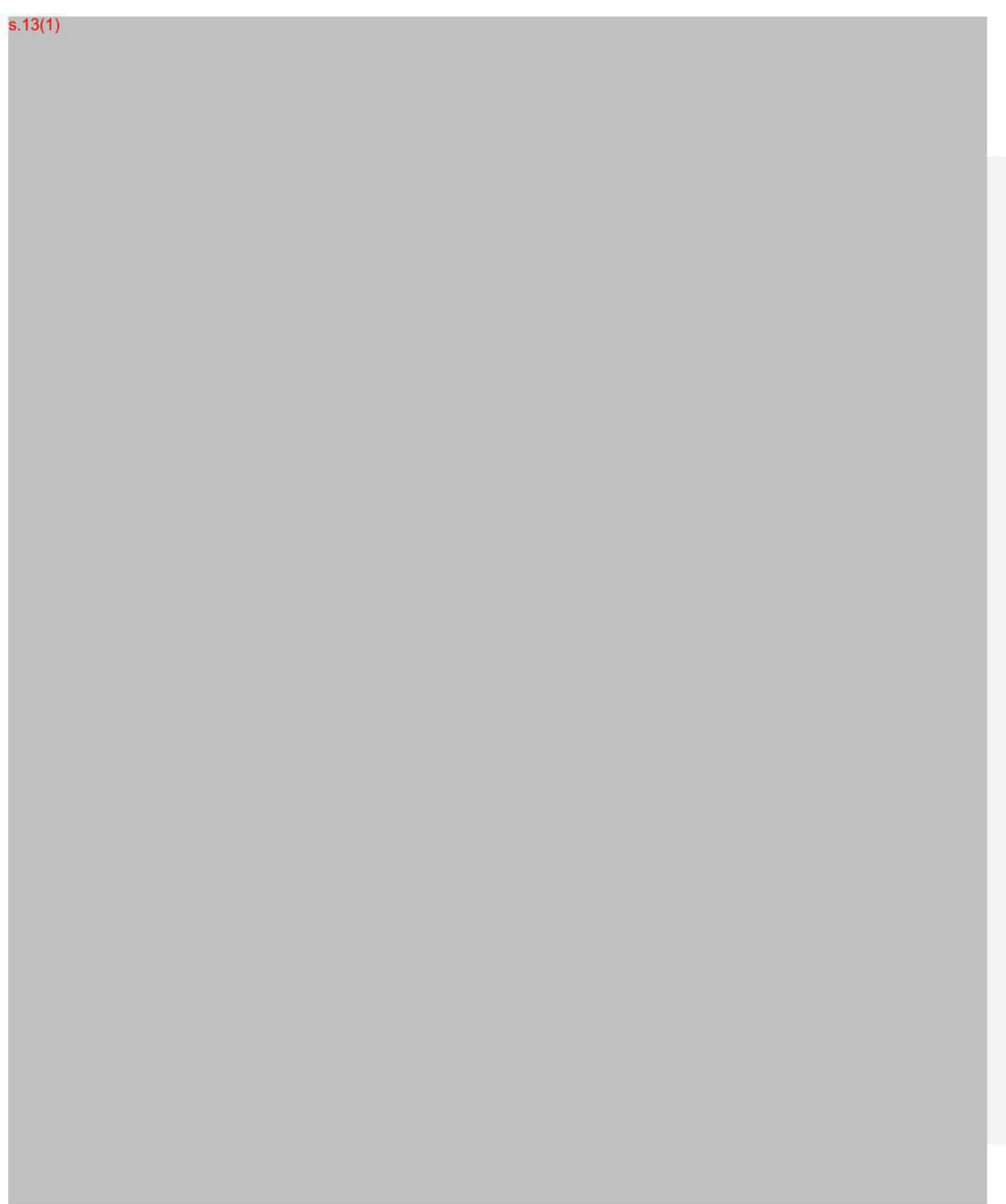


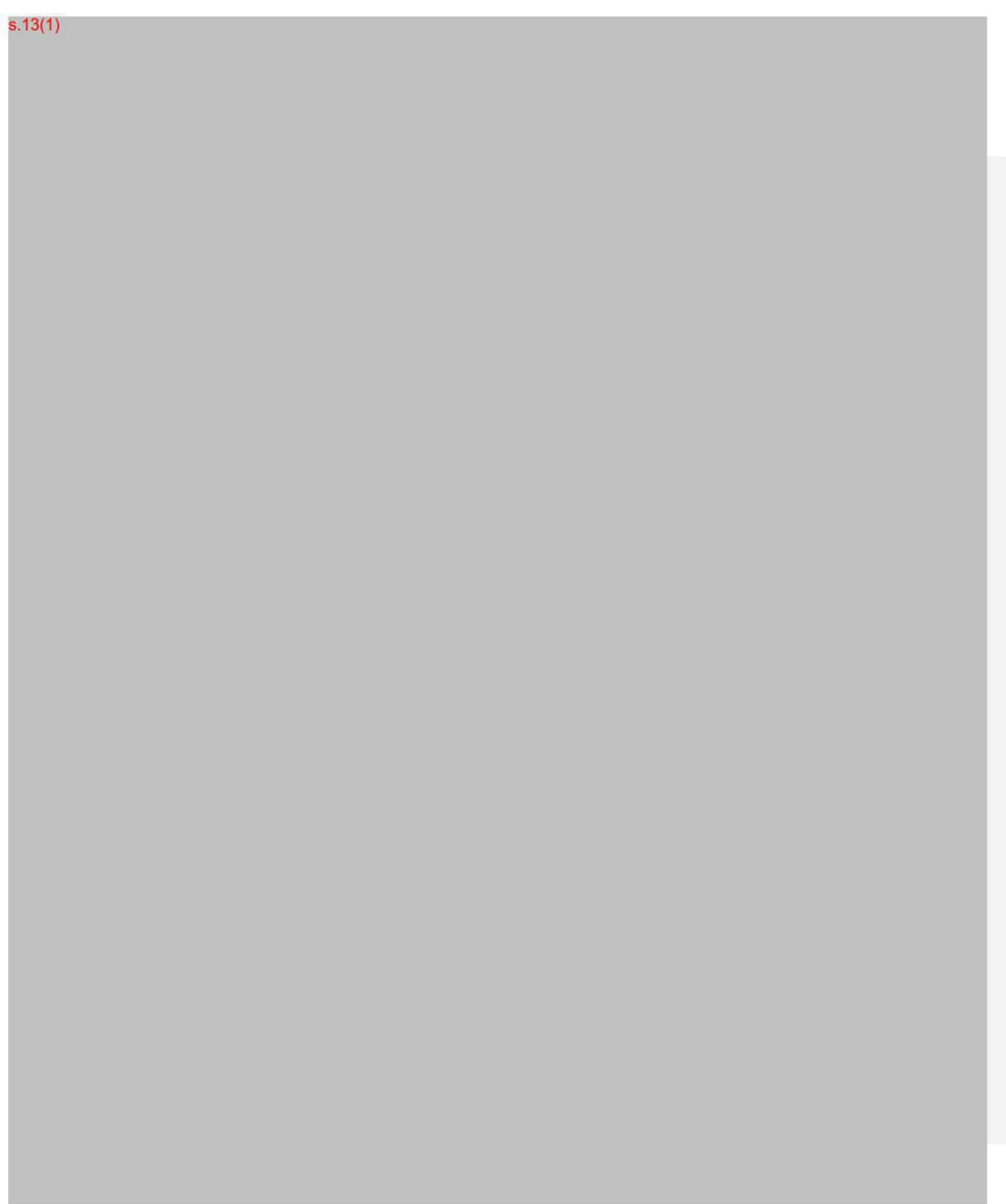


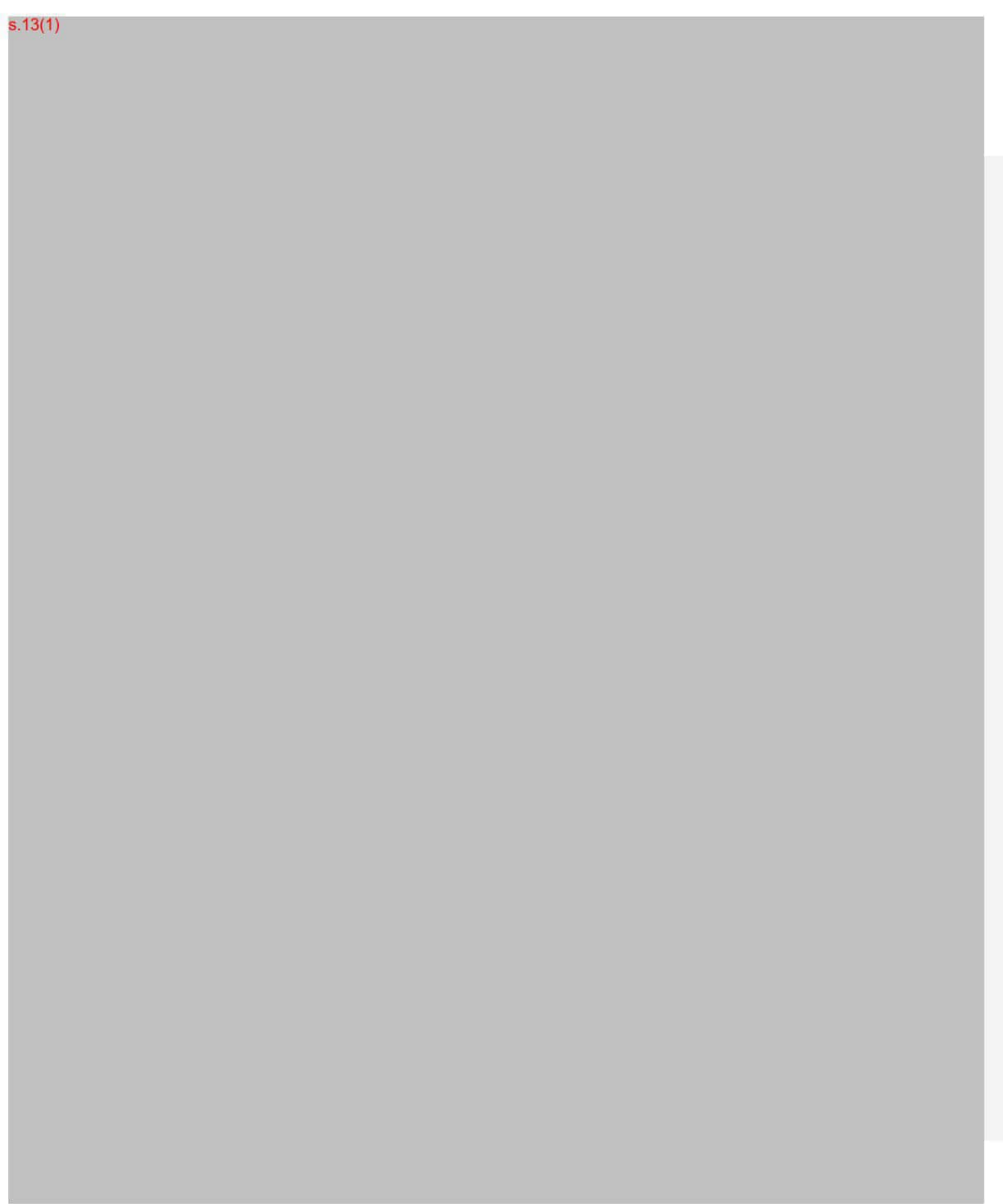


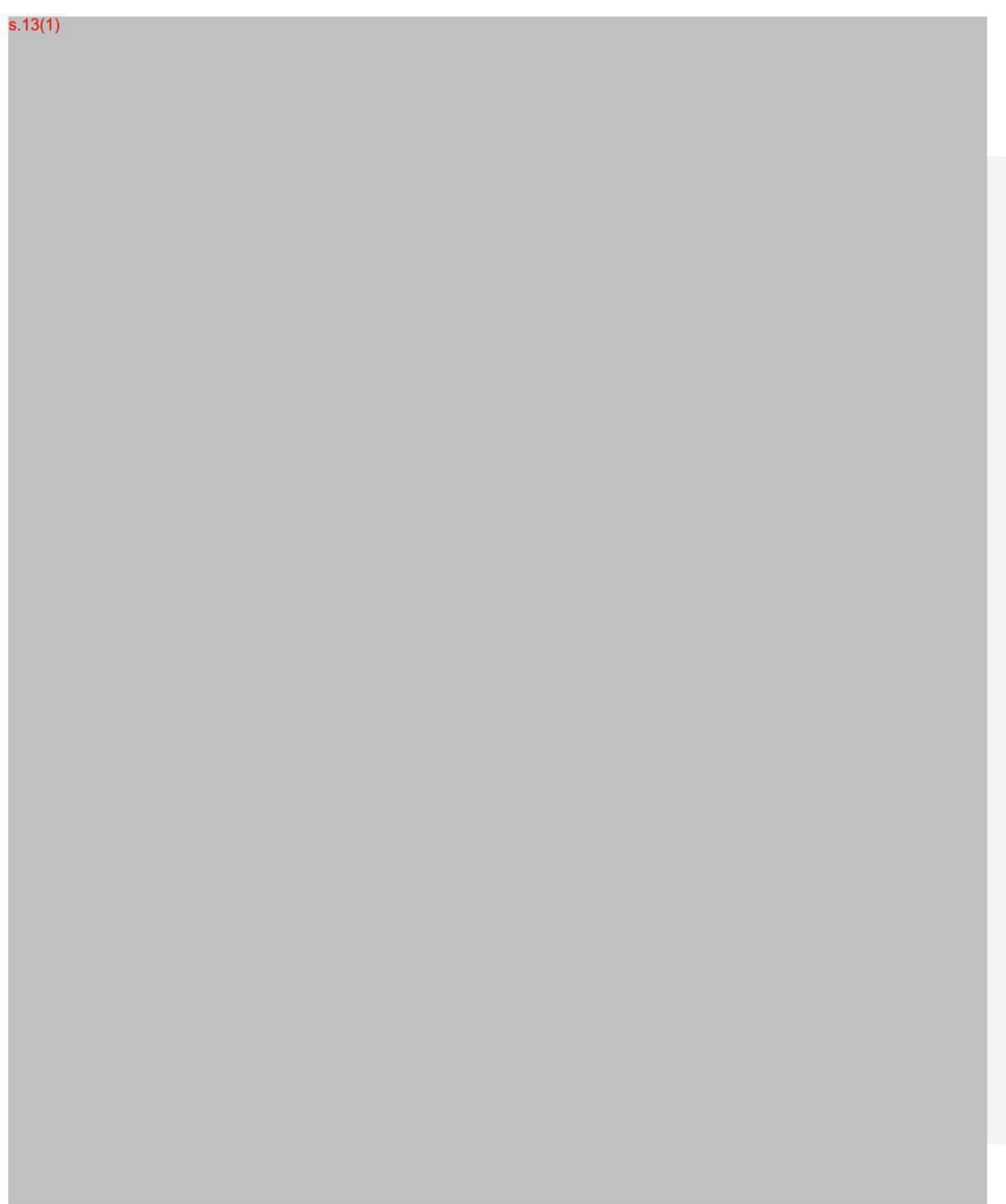


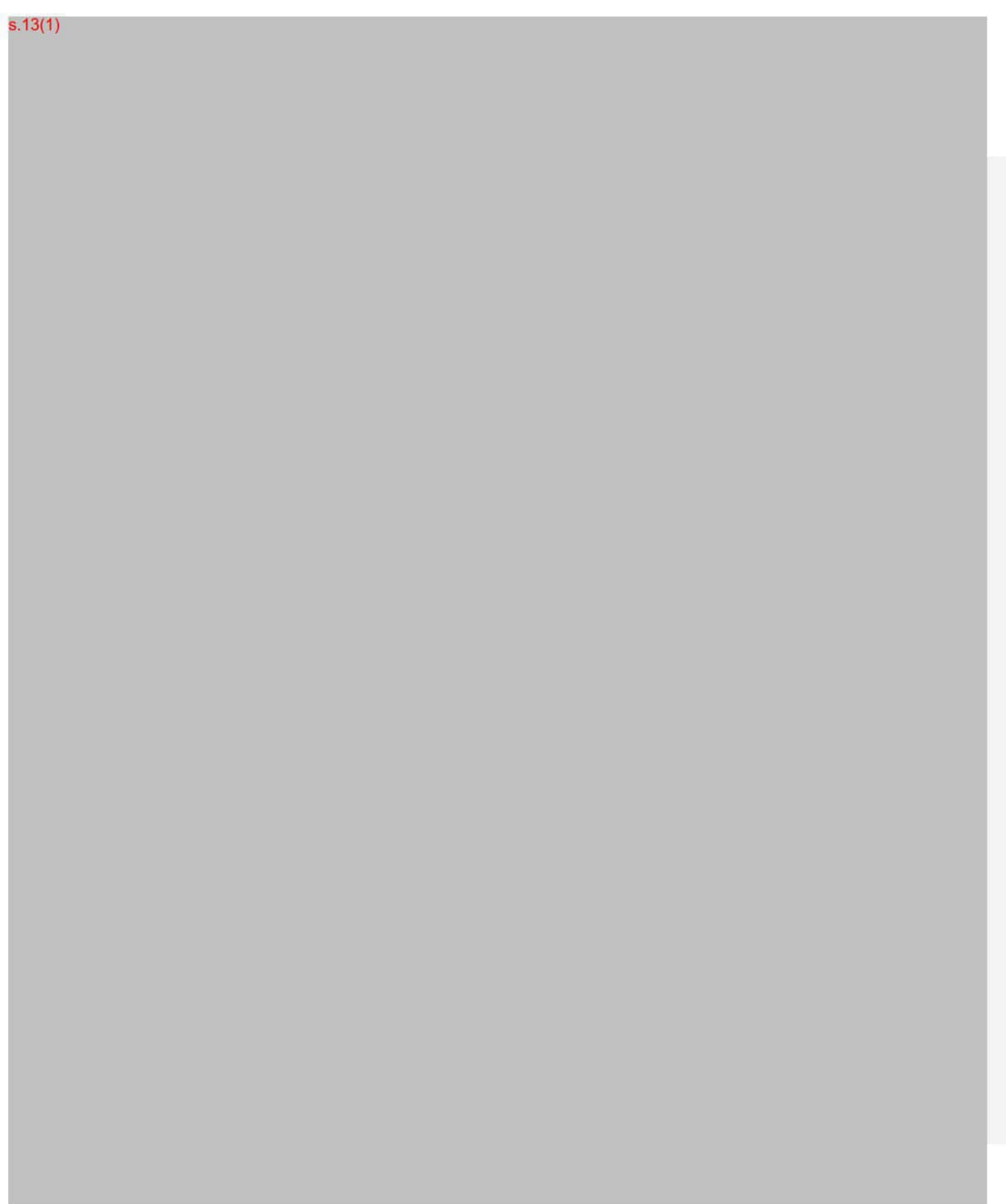


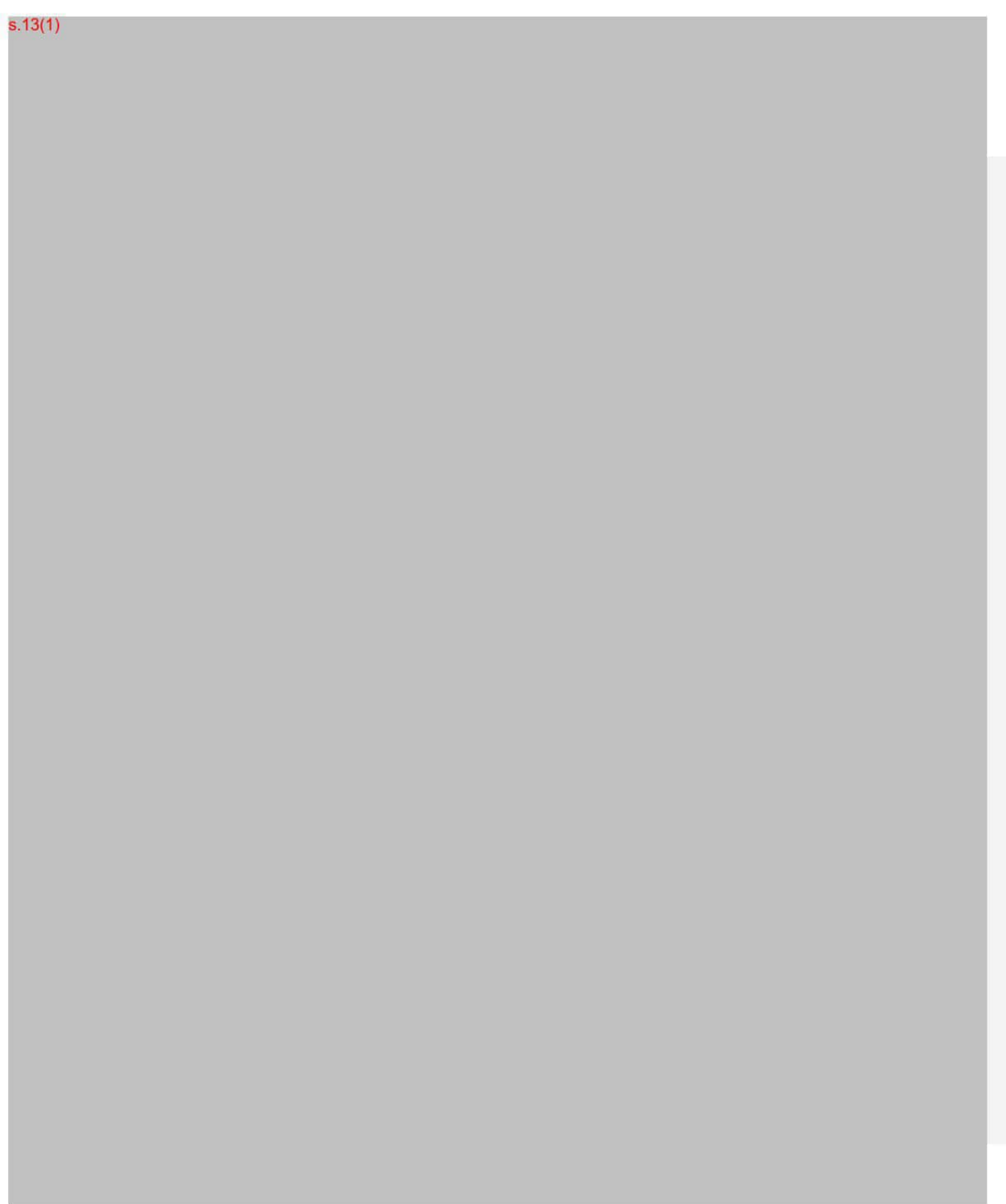


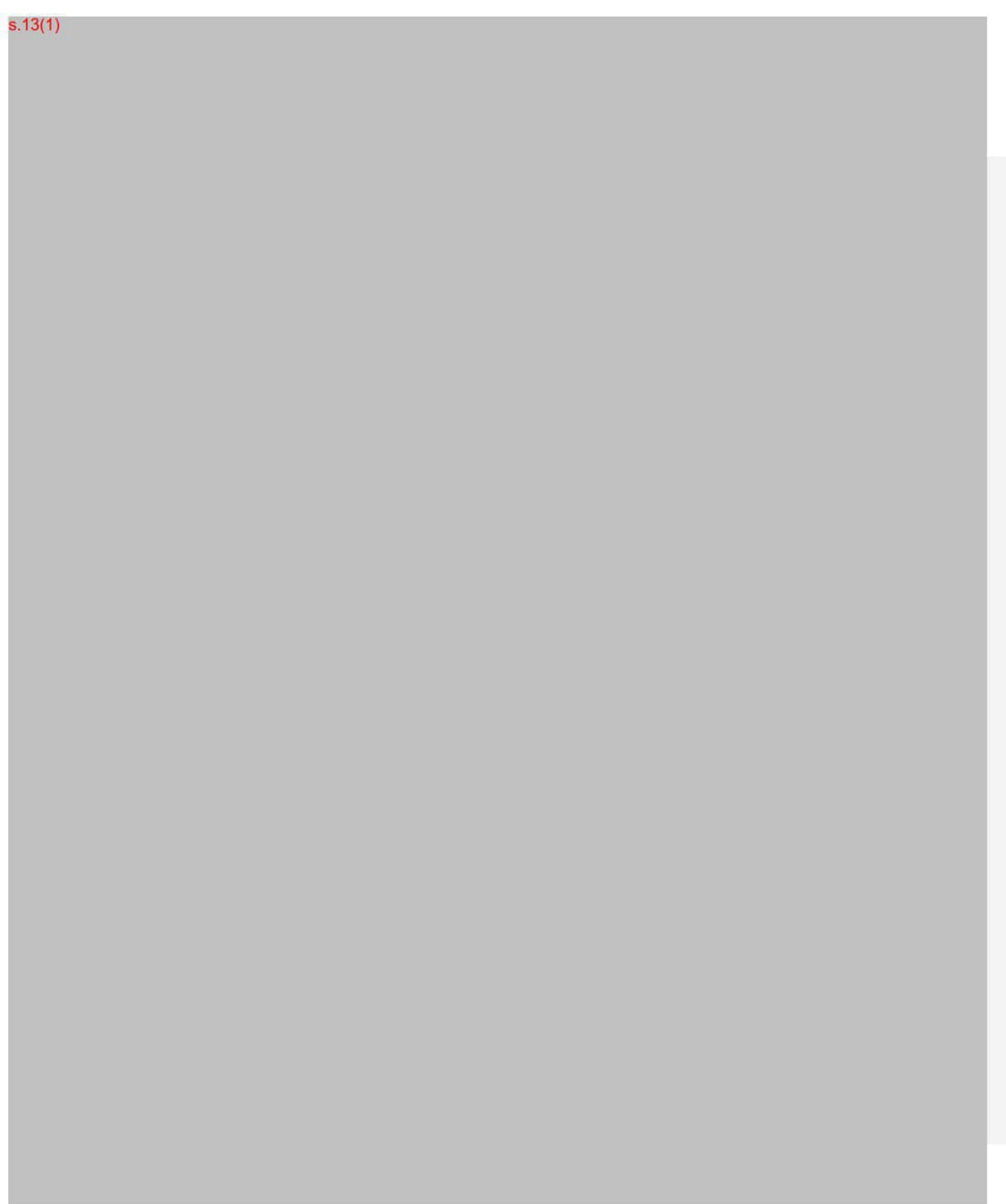


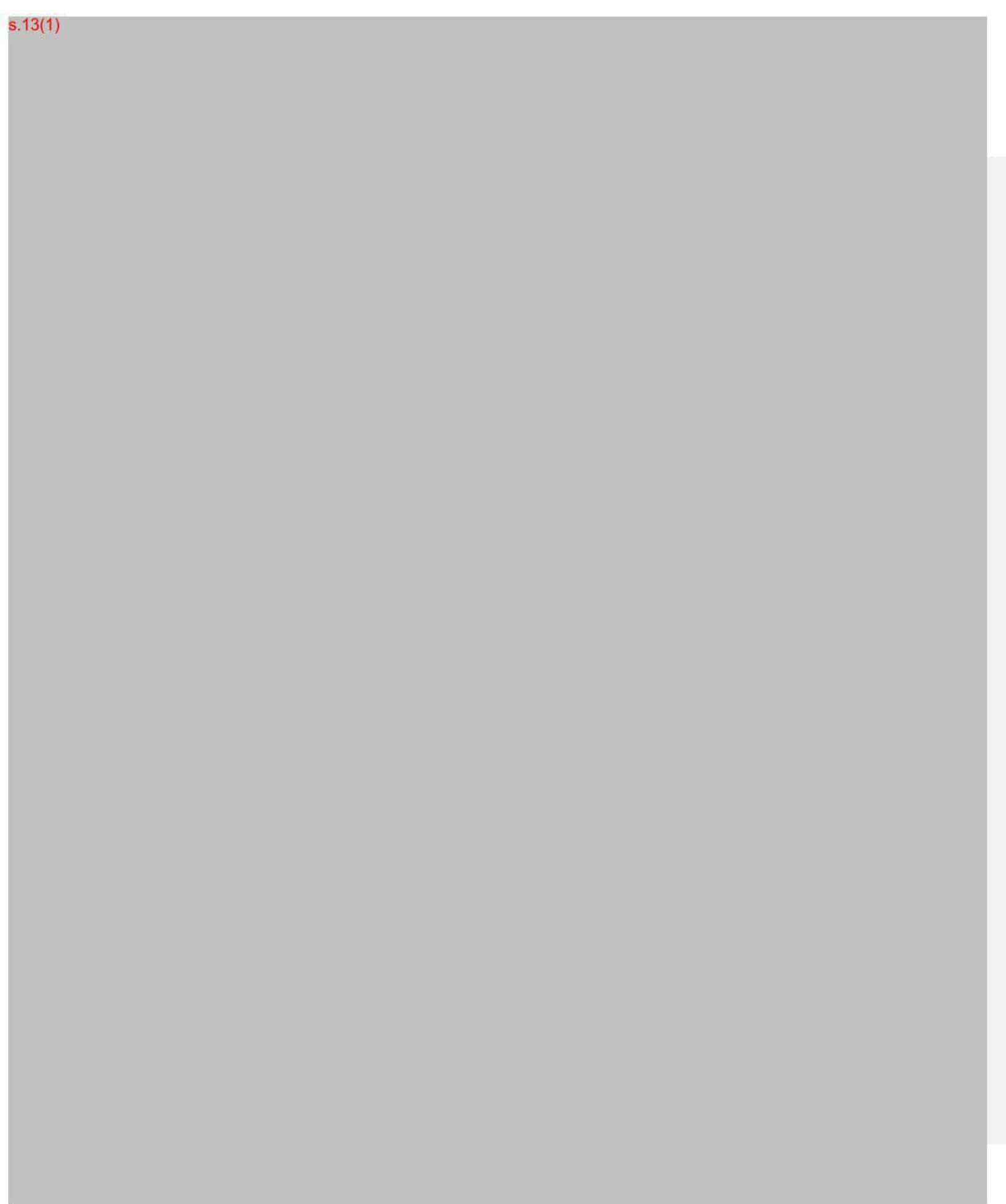


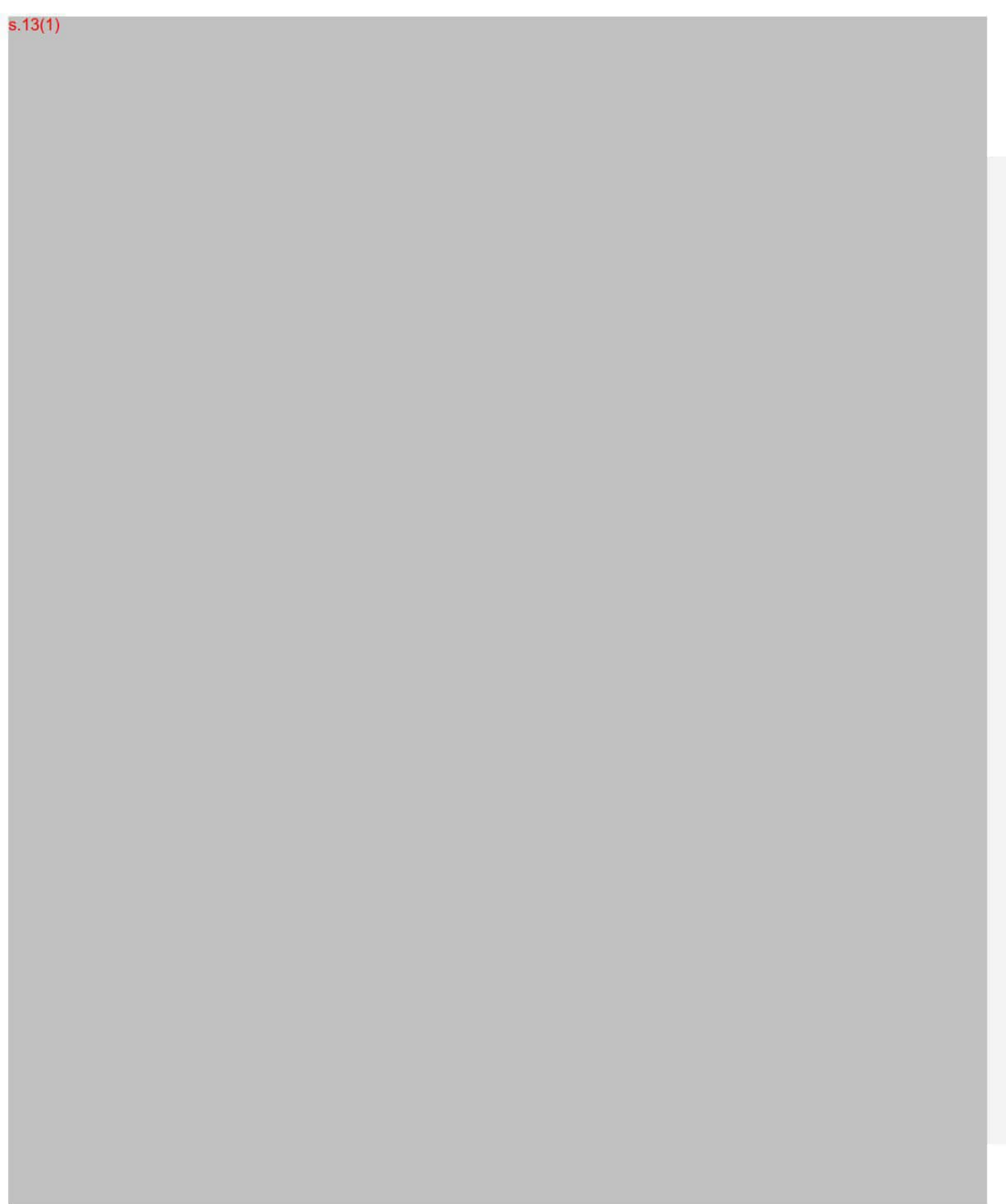


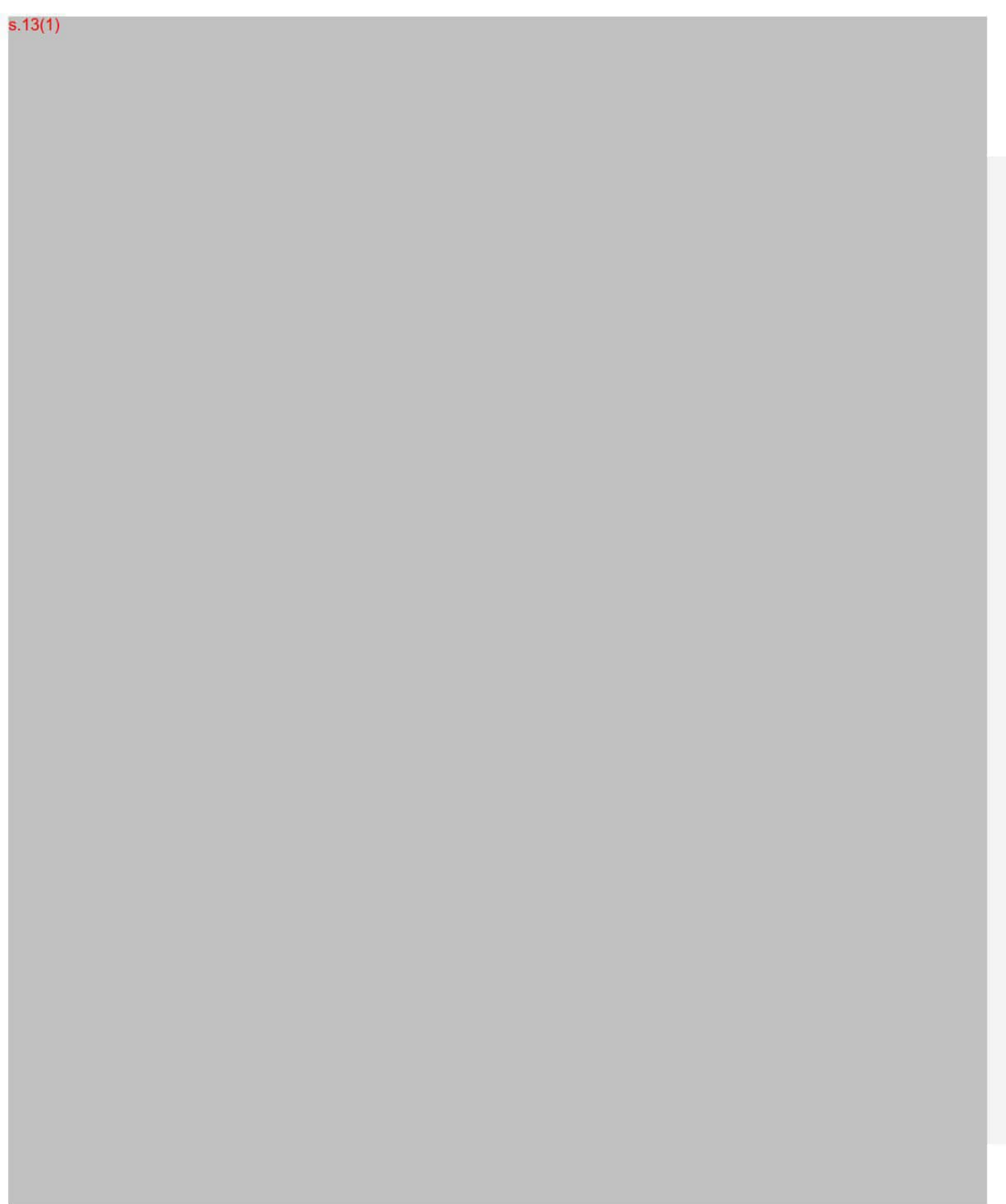


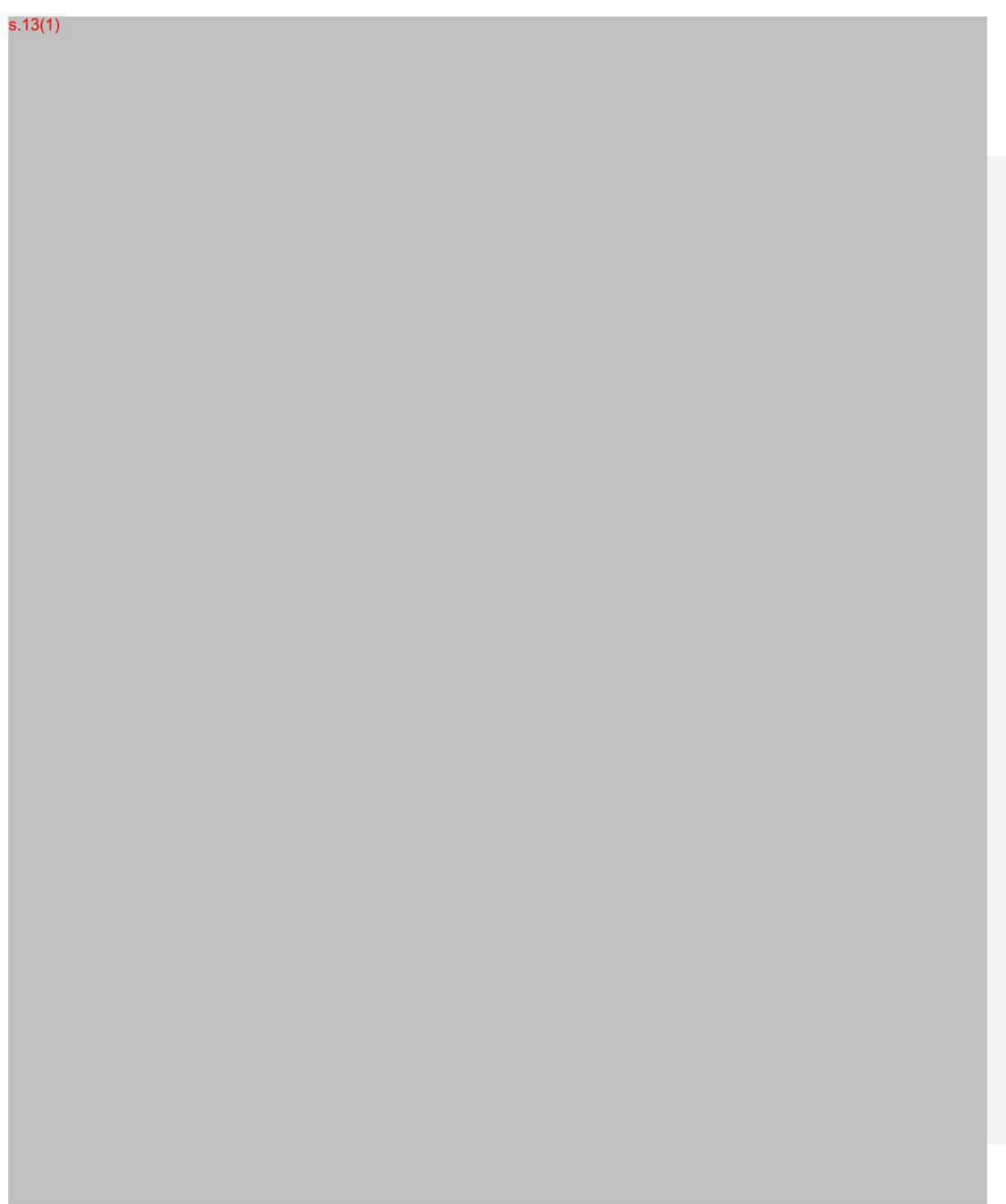


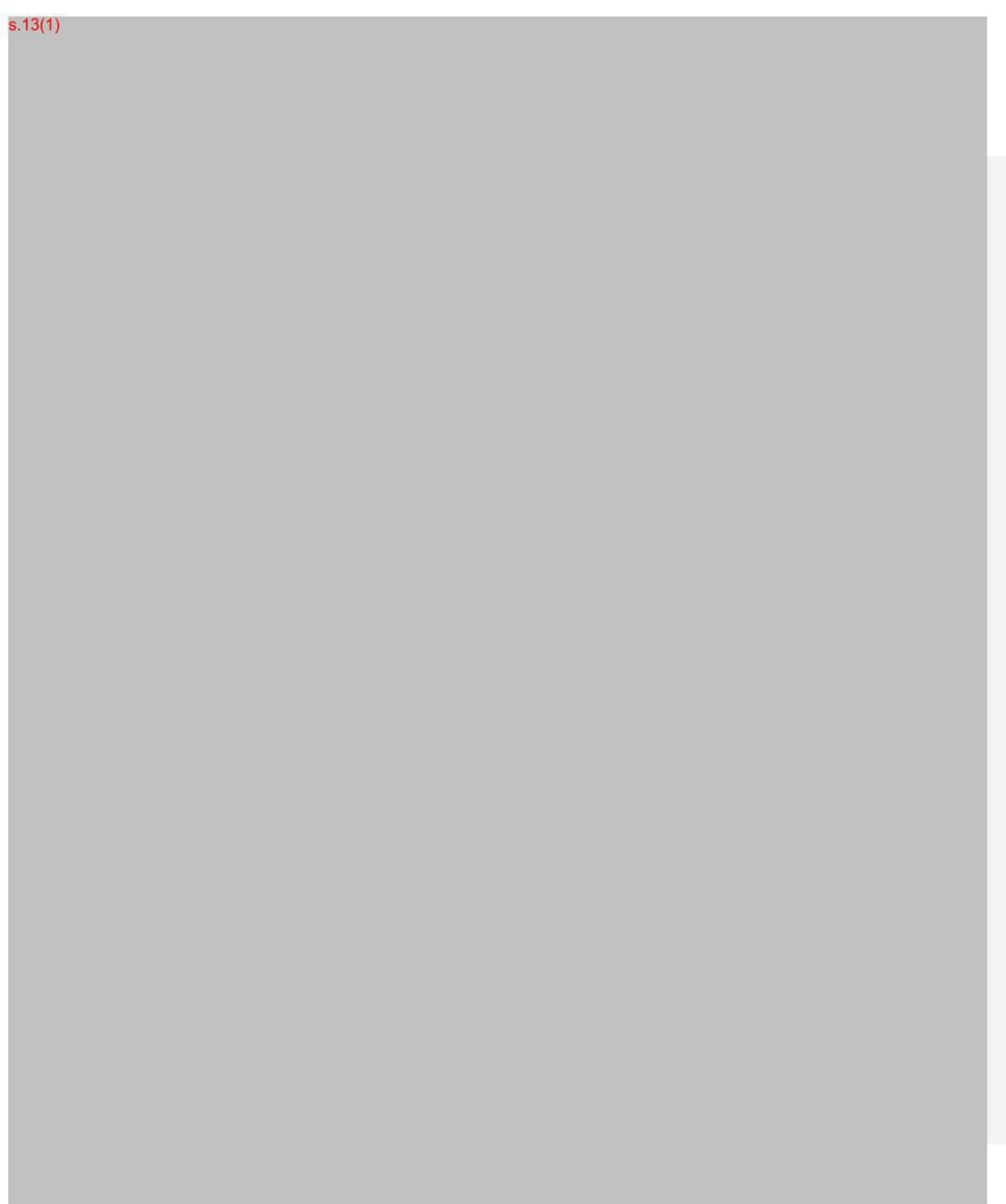


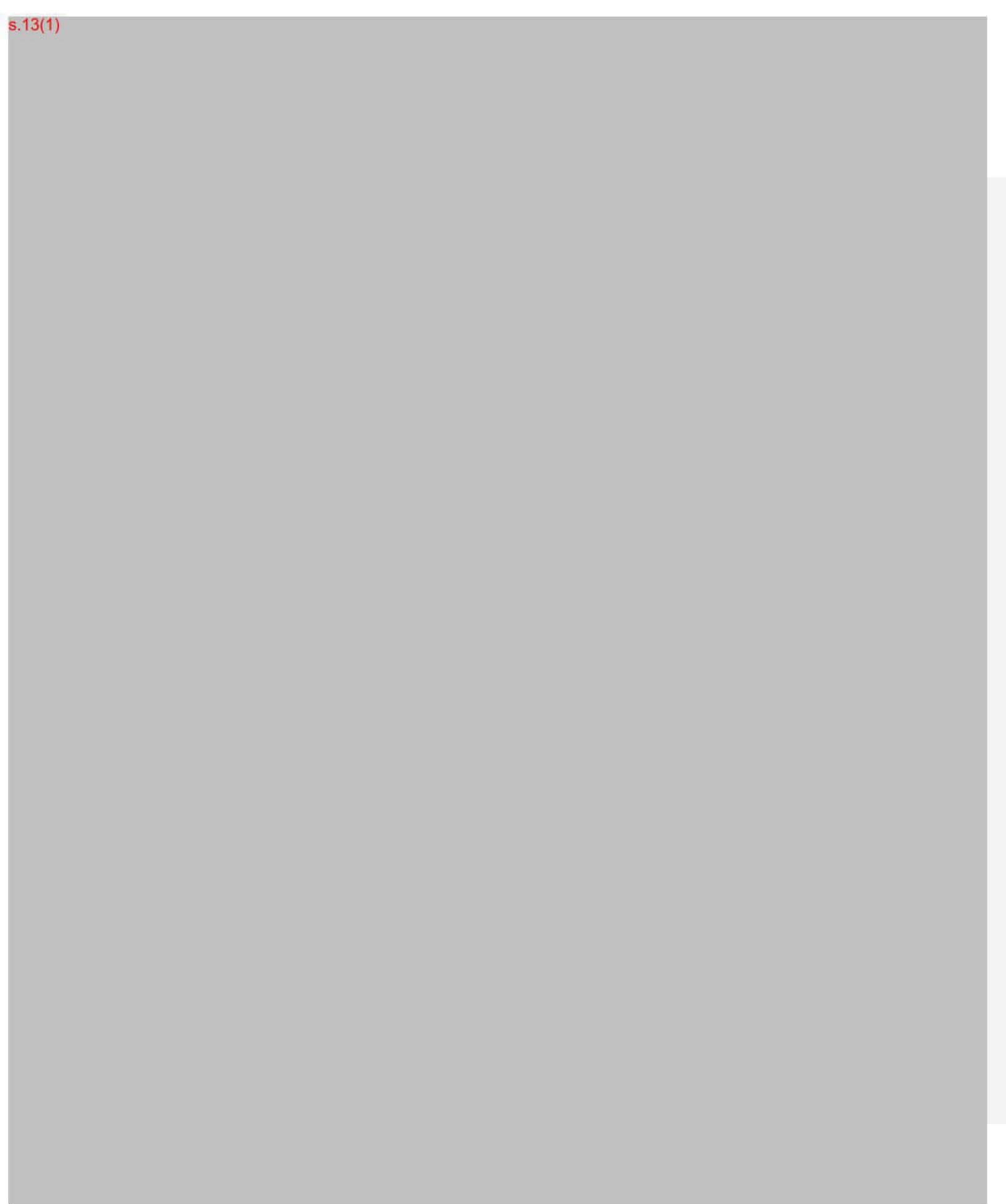


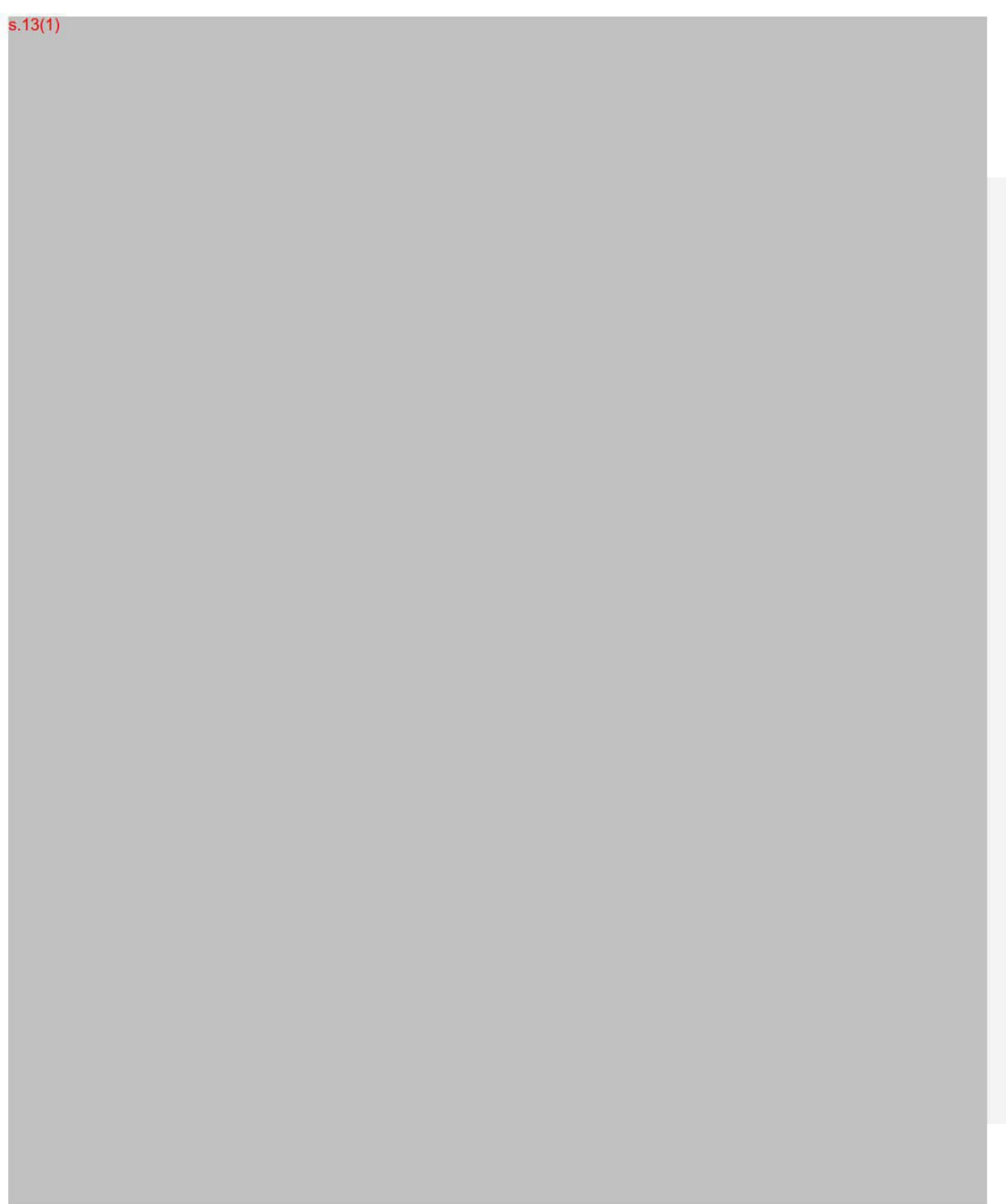


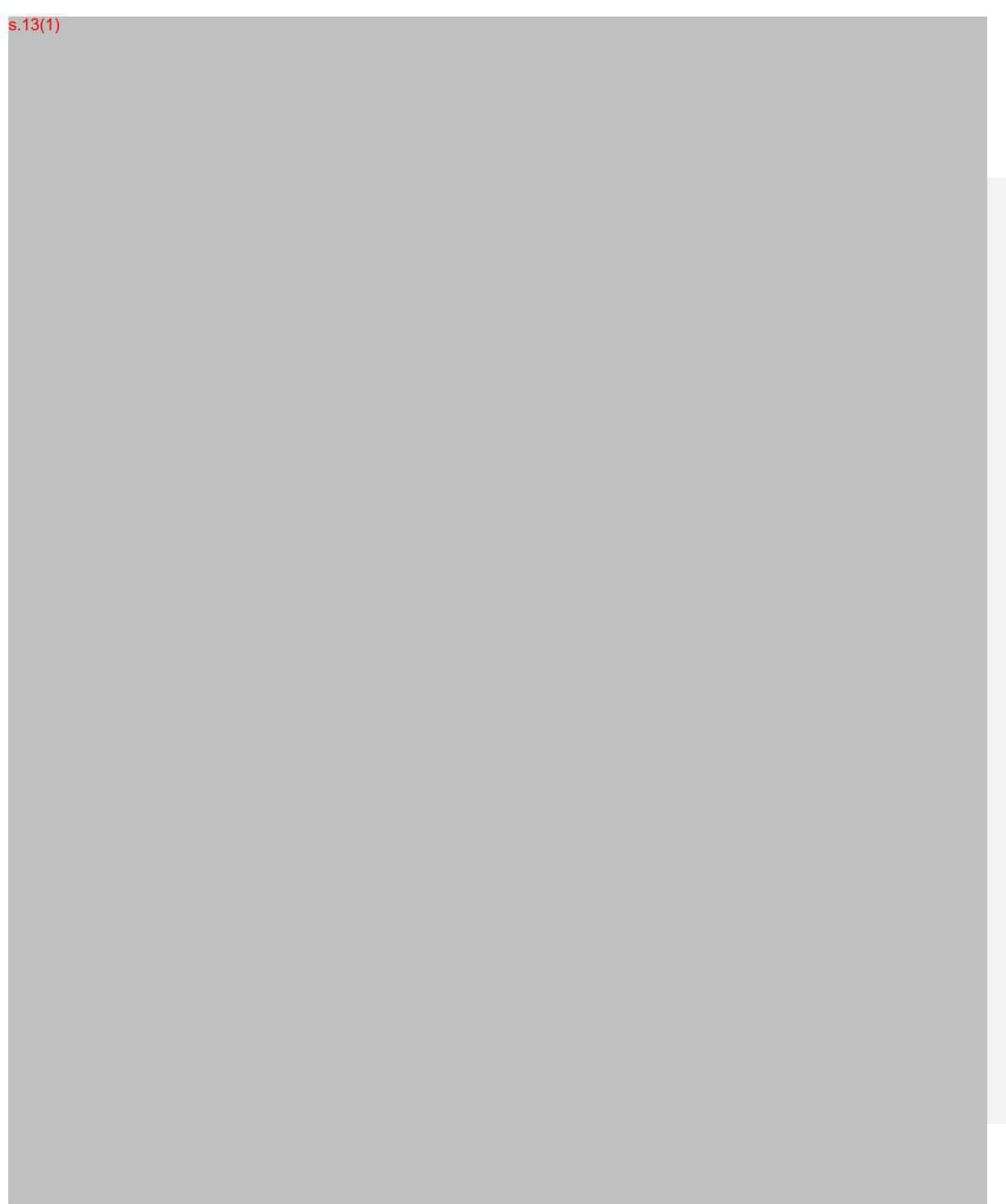


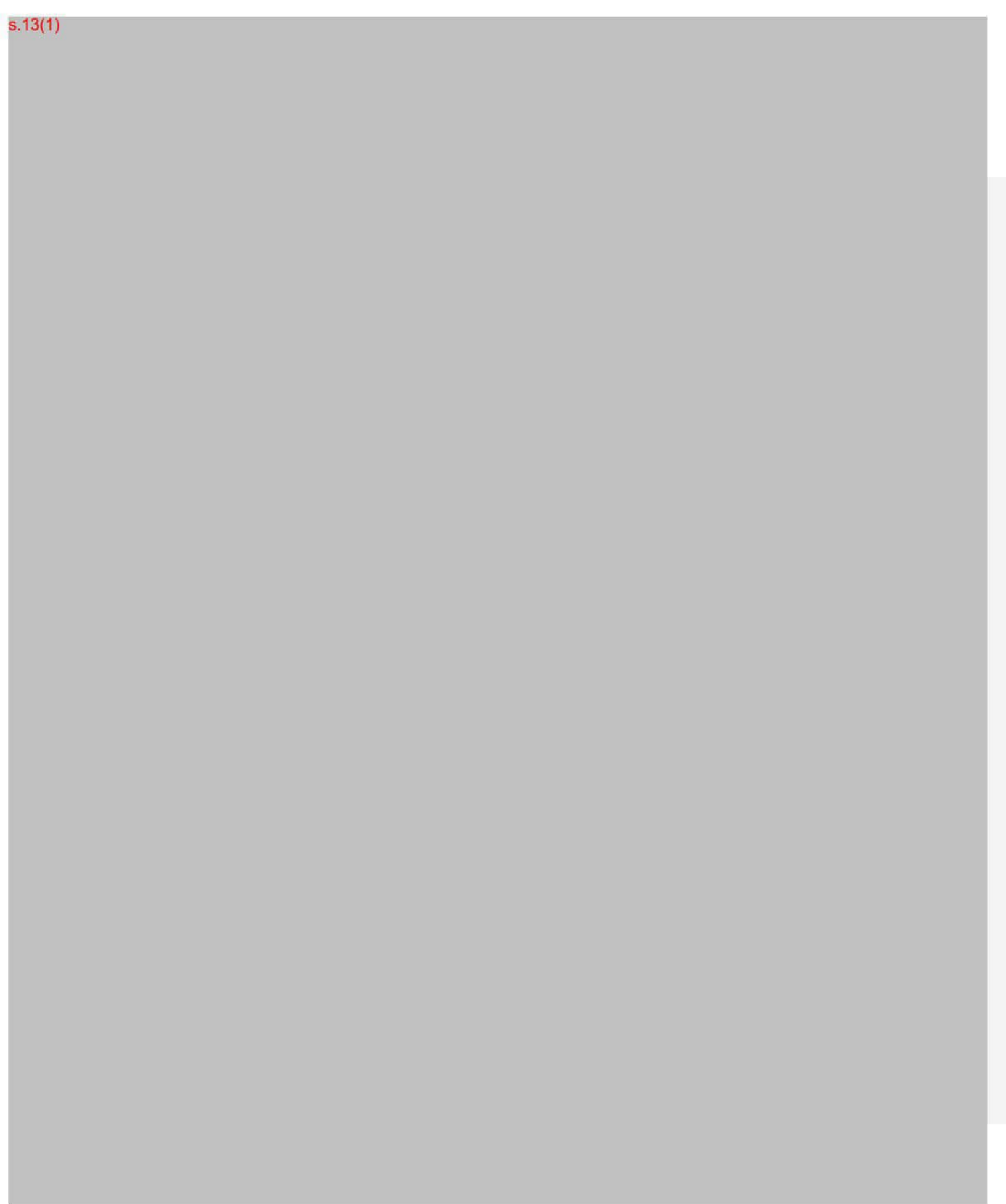


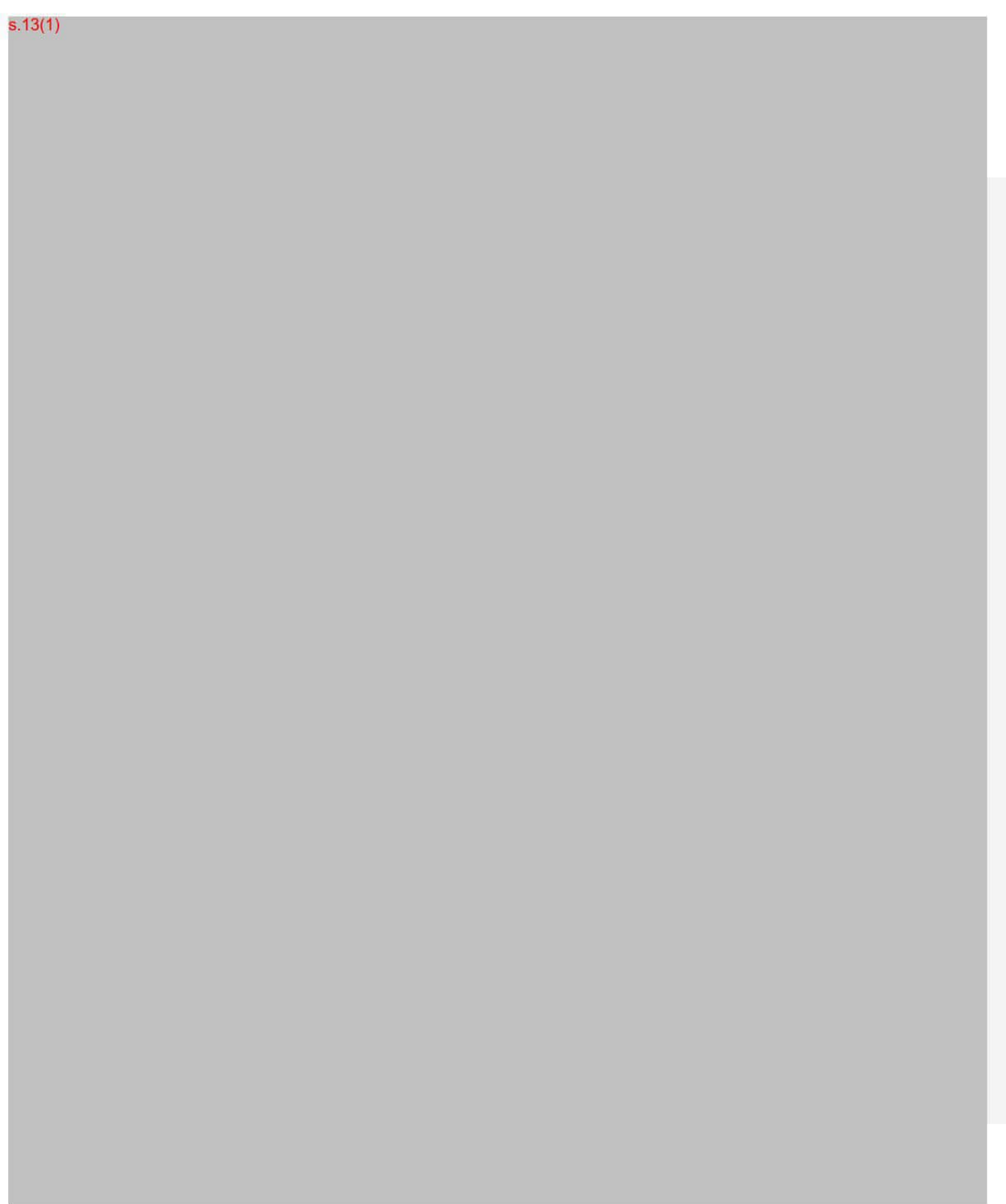


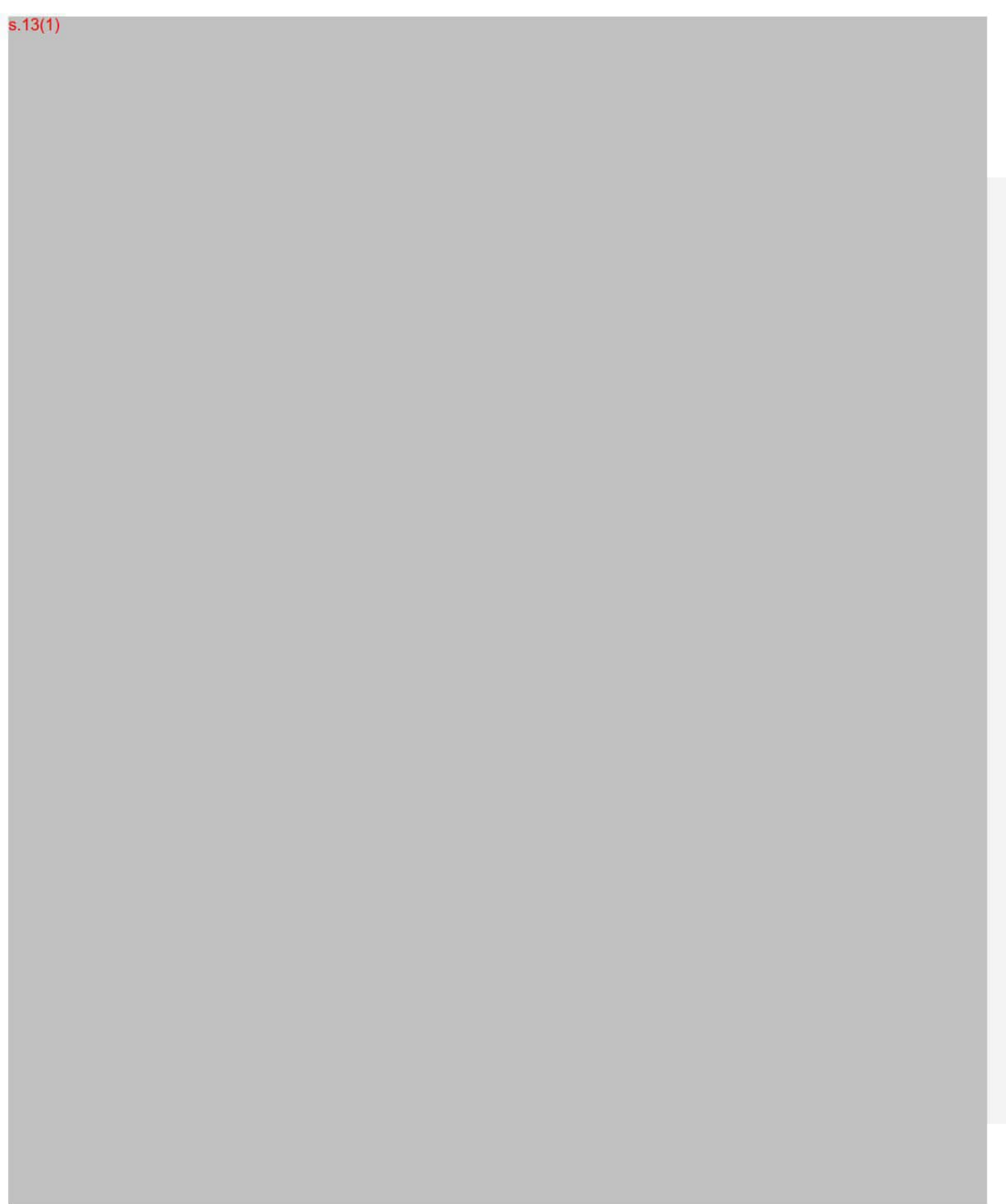


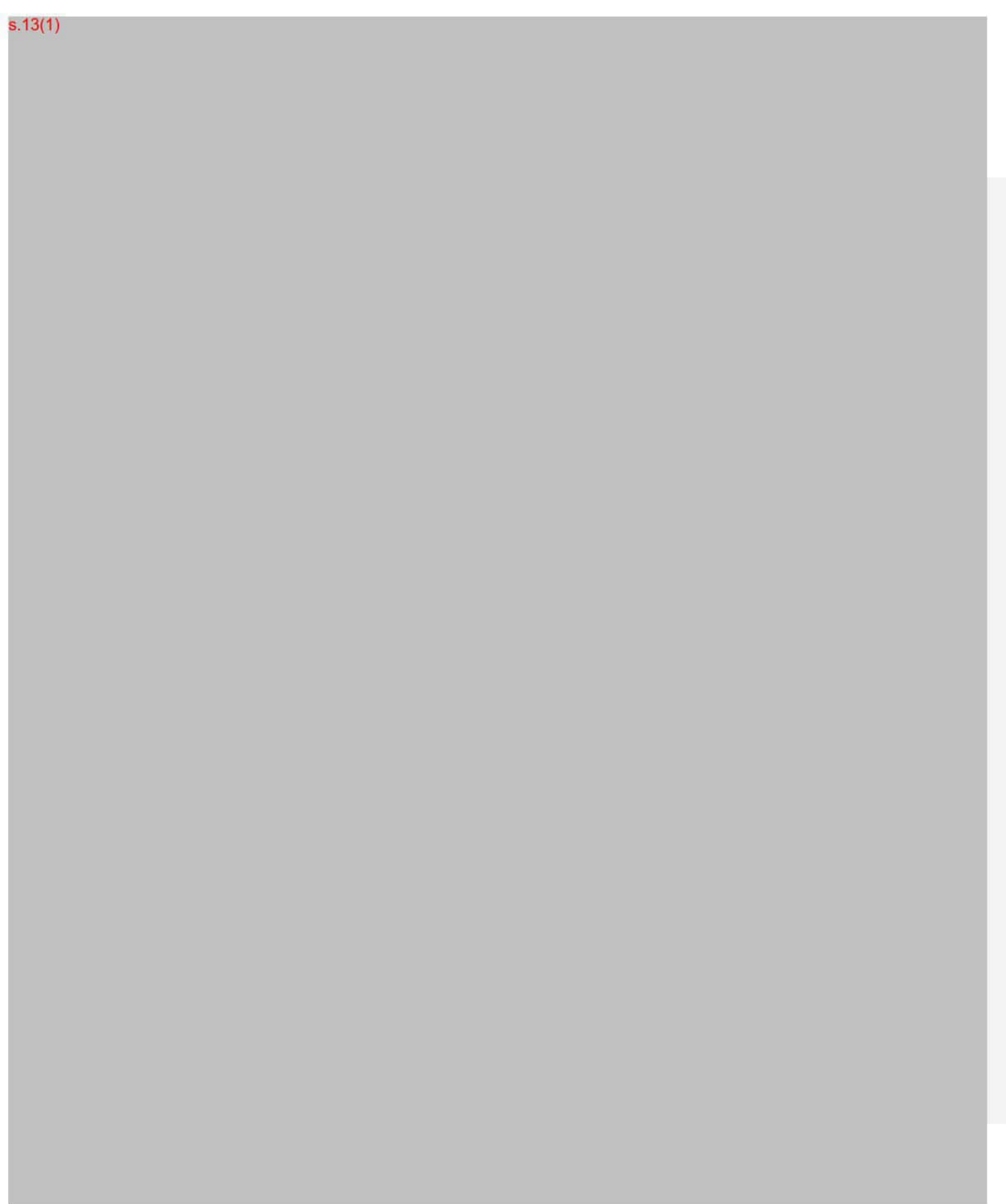


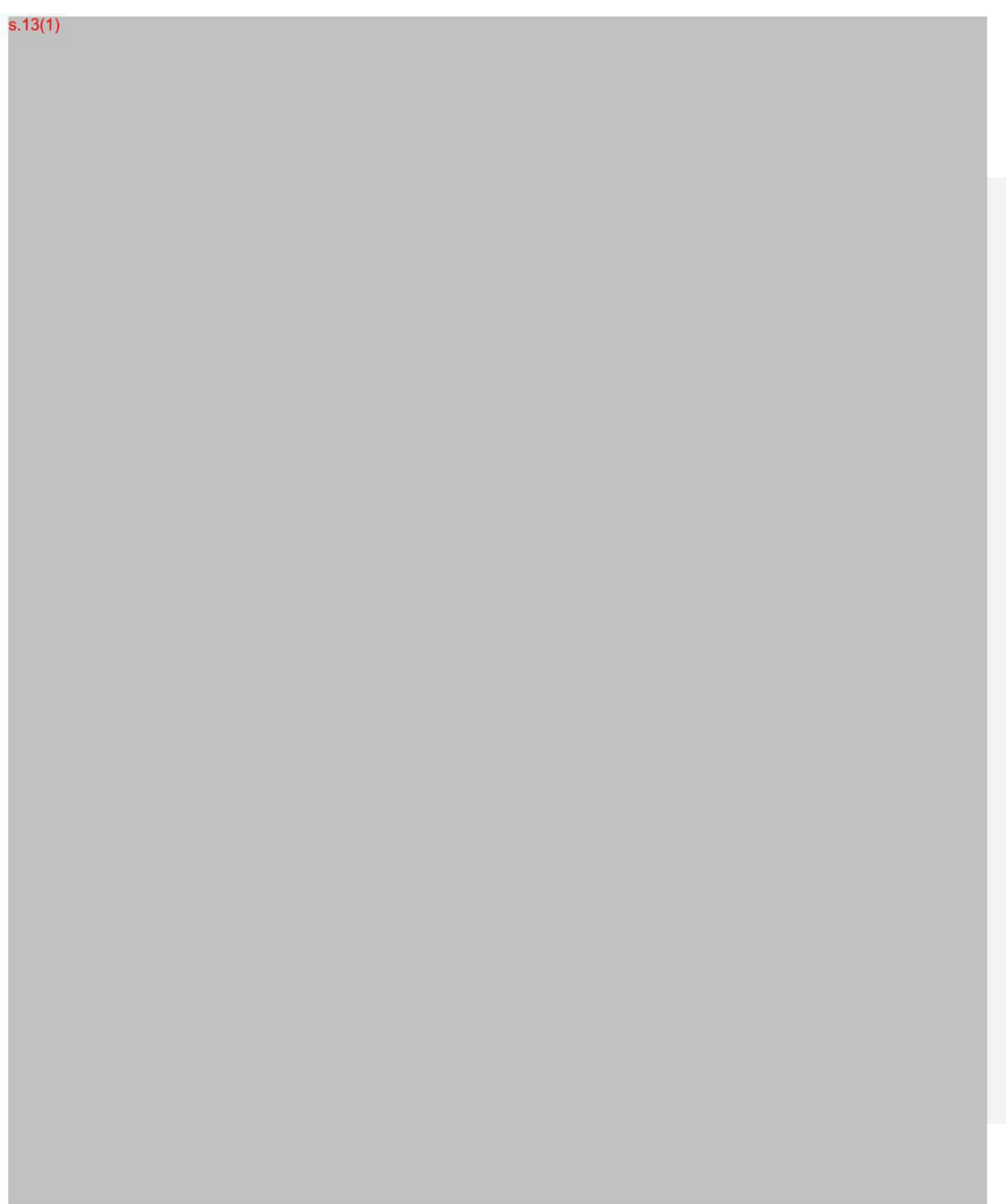


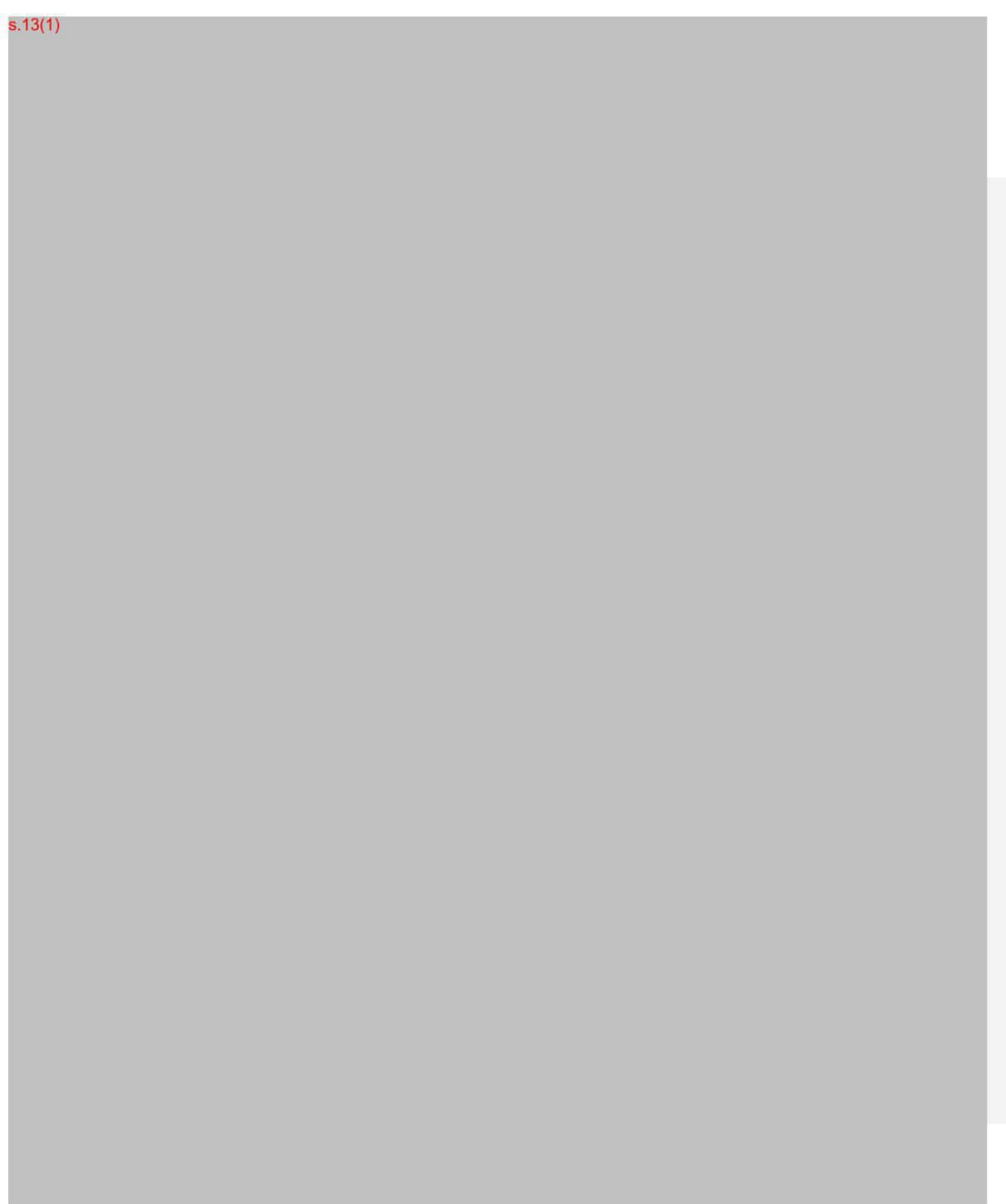












From: "Riley Beise" <riley@focaleng.com>
To: "Susan MacDougall" <susan@focaleng.com>
"Danny Taylor" <danny@focaleng.com>
"Li, Charling" <charling.li@vancouver.ca>
CC: "Kristian Storgard" <kristian@focaleng.com>
Date: 9/25/2023 3:25:19 PM
Subject: RE: SHGC suggestion

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Yeah I think you may be right Suze (and looping Charling in again). I've just checked the NECB and I actually can't find anywhere that says the SHGC has to be for the whole fenestration system. There is language for the U value to be determined by NFRC or CSA but nothing on the SHGC because it's not addressed in prescribed values. I'm actually kind of shocked that the NECB says so little on SHGC. So technically the NECB doesn't specify what SHGC to use but I think this falls under modelling basics and not something we need to spell out in the modelling guidelines.

In any case, I think this will get covered in the new work by the fenestration people. That work will address which U values are acceptable, so I expect it will cover SHGC as well since it is about using actual project sized windows vs NFRC generic sizes.

Anyhow, I hope that's helpful Charling.

Riley Beise P.Eng., BEMP
Principal | he/him
t 250.516.6088 ext. 2 | m 250.661.3817
riley@focaleng.com

From: Susan MacDougall
Sent: Monday, September 25, 2023 1:58 PM
To: Riley Beise ; Danny Taylor
Cc: Kristian Storgard
Subject: RE: SHGC suggestion

I believe this might have to do with reducing SHGC to account for framing? Perhaps a Passive House initiated question?

From: Riley Beise <riley@focaleng.com>
Sent: Monday, September 25, 2023 1:56 PM
To: Li, Charling <charling.li@vancouver.ca>; Danny Taylor <danny@focaleng.com>
Cc: Susan MacDougall <susan@focaleng.com>; Kristian Storgard <kristian@focaleng.com>
Subject: RE: SHGC suggestion

Hi Charling,

Danny and I just quickly discussed. I'm not entirely clear on what the proponent is suggesting the issue

is. The NECB snip refers to approximating the effects of shading by using a 20% reduction to the SHGC when using a software that cannot calculate actual shading. And, that interior shading should not be modelled unless automated.

I'm not sure what they mean by "nominal" SHGC. All modellers should be using the SHGC for the entire fenestration system as per NFRC / CSA A440 modelling.

We don't see any real need for adding language.

Riley Beise P.Eng., BEMP

Principal | he/him

t 250.516.6088 ext. 2 | m 250.661.3817

riley@focaleng.com

From: Li, Charling <charling.li@vancouver.ca>

Sent: Monday, September 25, 2023 12:12 PM

To: Danny Taylor <danny@focaleng.com>

Cc: Riley Beise <riley@focaleng.com>; Susan MacDougall <susan@focaleng.com>; Kristian Storgard <kristian@focaleng.com>

Subject: SHGC suggestion

Hello Danny, I received the following suggestion on SHGC – please let me know your high level feedback on whether it's something worth considering for the EMGs update. I haven't come across any comments on the use of SHGCs thus far.

Thank you!

s.13(1)

Charling Li, P.Eng., M.Urb. | Green Building Engineer

(she/her/hers)

Green & Resilient Buildings Branch | Sustainability Group | City of Vancouver

Charling.Li@vancouver.ca | 604.871.6833

NOW OPEN: INDUSTRY SURVEY ON INDOOR AIR QUALITY PRACTICES

The City of Vancouver would like your feedback on materials selection, construction and pre-occupancy practices for improving indoor air quality in large new construction projects in the Lower Mainland market. Your feedback will help inform future green building policy and stakeholder engagement for Part3 new construction projects in Vancouver. The survey should take around 5 minutes to complete and will close on September 22nd, 2023.

Link to the survey: <https://survey.alchemer-ca.com/s3/50200337>

[/City-of-Vancouver-IAQ-Research-Survey\[survey.alchemer-ca.com\]](https://survey.alchemer-ca.com/s3/50200337/City-of-Vancouver-IAQ-Research-Survey)

For more information on green buildings, please visit <http://vancouver.ca/zeroemissions>

I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̓əm ([Musqueam \[musqueam.bc.ca\]](https://musqueam.bc.ca)),
Sḵwxwú7mesh ([Squamish \[squamish.net\]](https://squamish.net)), and səliłwətaʔt / səliłwitulh ([Tsleil-Waututh \[twnation.ca\]](https://twnation.ca)) nations.

From: "Jonathan Layton" <jonathan@laytonconsulting.com>
To: "Adrian Edge" <adrian@fenestrationcanada.ca>
"Terry Adamson" <terry@fenestrationcanada.ca>
CC: "Li, Charling" <charling.li@vancouver.ca>
"Isabelle Clewley" <isabelle@fenestrationcanada.ca>
Date: 3/31/2025 6:43:26 PM
Subject: Re: Thermal Modelling Project EMG Discussion Minutes

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Hi Charling,

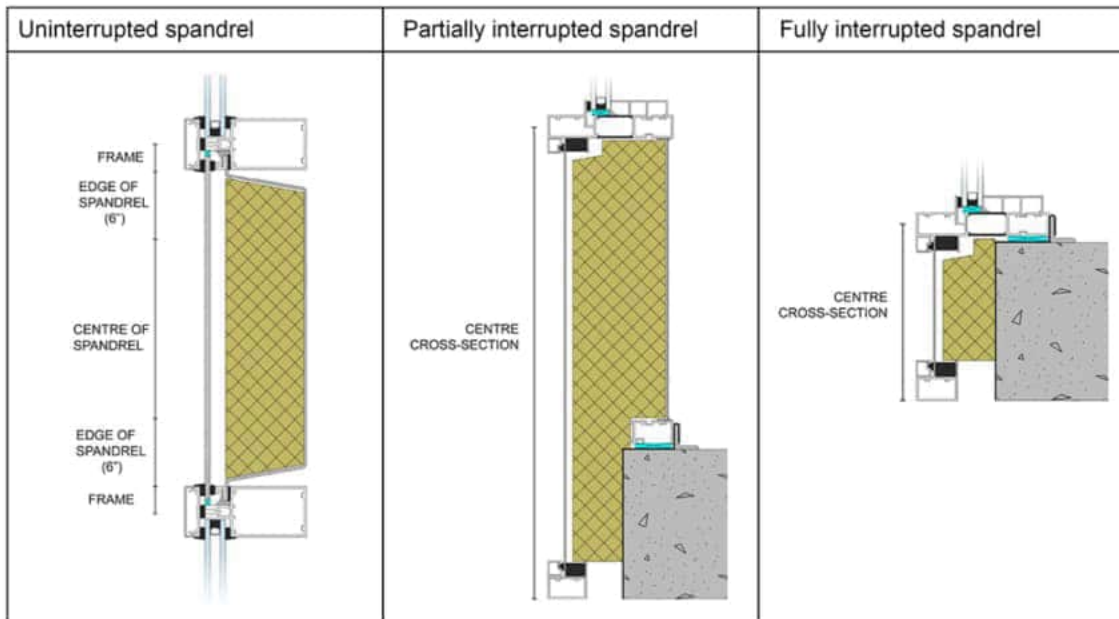
Sorry it took so long to get back to you. Between leaving the laptop for a Spring Break vacation and returning to a nasty cold, I haven't been on top of all my emails.

As Terry mentioned, myself, Terry and Adrian haven't been able to meet since the Task Group meeting, but we are meeting tomorrow, so I can follow-up after if there are any changes to the information below.

From the task group meeting I can say that all involved very much appreciated the efforts of the City of Vancouver to adopt the suggested language. Thank you for including us in the discussions, and acting on our concerns!

As for the Spandrel language, to give you some background info, the FenBC calculation method was the result of research done by RDH for NFRC prior to them (NFRC) establishing their own guidelines. Since then, NFRC continued to do more research and eventually outlined their own methodology. The biggest problem is that the FenBC (now FGIA FenBC region) document is out of date, and you would not be able to generate the same results /there would be a conflict with the NFRC methodology. I will say, there is some value in the document, as it has proposed calculations for spandrel that is not continuous in its depth /partially interrupted (For instance, at the slab by-pass where the depth of the spandrel panel decreases to fit around the slab), which is outside of NFRC evaluation. That said, this would need to be re-evaluated as the base calculation relies on a different distance of "edge" value (it is 6" in FenBC, and 10" in NFRC documentation). As you can see, it can get quite technical pretty quickly, but suffice it to say that the referenced FenBC document is simply out of date, although it may be worth updating and including in the fenestration tool user manual. See below image to help make sense of what I said above - methodology for partially interrupted

is not calculated under NFRC, and we assume worst case/conservative scenario for site evaluations.



For now, my recommendation for spandrel calculations would be to simply refer to Section 8.22 "Spandrel Panel Systems" in the current NFRC Simulation Manual (July 2024) with additional guidance found in NFRC 100 - 2023.

Additionally, IF Path A needs to have a sunset, then I agree with Terry on his proposed time limit, as our industry will not only need time to adapt themselves, but also for those who are requesting the information (ie. RPR's and AHJ's outside of Vancouver to understand what they are asking for). I still have several building inspectors specifically requesting labels, even with a site-specific thermal report.

That said, and the reason for the IF, is that in my most recent review of the BCBC 2024, I noticed that the wording of thermal compliance in 9.36.2.7 "Thermal Characteristics of Fenestration, Doors and Skylights" it specifically calls out fenestration products to have "**overall thermal compliance**" and completely ignores standardized NFRC/CSA values. For Part 3 (or buildings outside of Part 9) we refer to Part 10, and in that it references Part 8 of the NECB and the City of Vancouver EMG. When you refer to part 8 of the NECB, there is only the performance path listed (any prescriptive paths are only in Parts 3-7 of the NECB).

Essentially, I am posing the question that rather than set an end-date of the compliance path A, would it be more correct to point to complying to the requirements of the respective building code? Just a last-minute thought on my end.

My one concern is that if Path A is singled out as being "non-compliant" by a certain date, it may actually give the impression that certification to standardized sizes is not needed, which may be in opposition to the BC Energy Efficiencies Consumer Act. Additionally, the FenCan Project Specific Tool relies on using certified values, so any misunderstanding could be disruptive to our current efforts.

As for the tool: Here is a link for you to look at the "1.0 version" interface. [FenCan Project Specific Glazing Calculator \[zesty-taffy-d45376.netlify.app\]](https://zesty-taffy-d45376.netlify.app)

If you are free, I am actually speaking at an event in Surrey with Fenestration Canada organized specifically for Commercial Glaziers on Tuesday the 8th. ([Canadian Glazing Conference | Fenestration Canada \[fenestrationcanada.ca\]](https://www.canadianglazing.com)).

If not, I would be happy to walk you through this first version. Additionally, Our task group is working hard to complete this for release in May, with an expectation that a user manual and an updated version will follow.

I have meetings from 9-11 tomorrow, but I am free afterward if you would like any more information.

thanks,

JONATHAN "JoMo" LAYTON
CEO, Partner, MBA, NFRC Certified Simulator



FENESTRATION AND FACADE ENGINEERING CONSULTANTS
NFRC CERTIFIED SIMULATION LABORATORY
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Cell: 604-724-1892 | jonathan@laytonconsulting.com

FenCan Project Specific Glazing Calculator
[\[zesty-taffy-d45376.netlify.app\]](https://zesty-taffy-d45376.netlify.app)

Calculate project specific glazing properties

zesty-taffy-d45376.netlify.app

From: Adrian Edge <adrian@fenestrationcanada.ca>
Sent: Monday, March 31, 2025 2:27 PM
To: Terry Adamson <terry@fenestrationcanada.ca>
Cc: Li, Charling <charling.li@vancouver.ca>; Jonathan Layton <jonathan@laytonconsulting.com>;
Isabelle Clewley <isabelle@fenestrationcanada.ca>
Subject: Re: Thermal Modelling Project EMG Discussion Minutes

No additional comments from me save a reminder that the pathway using Fenestration BC's spandrel calculation method was something that I believe Jonathan was going to provide a bit more to.

All the best,



Adrian Edge

Director - Codes and Regulatory Affairs /
Directeur - Codes et Affaires Réglementaires

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3A1



On Mon, Mar 31, 2025 at 2:22\u00239 PM Terry Adamson
<terry@fenestrationcanada.ca> wrote:

Hi Charling,

We have been unable to meet to discuss.
Spandrel thermal is not my specialty, but the streamlining of the language with clear pathways appears to make sense to me. I do not have any issues with this change.

As for the Method A timeline.
Rather than "several years" maybe
"Method A will be phased out over ~~several years~~ **a minimum of 24 months** once industry tools (e.g. tools approved by National Fenestration Rating Council or Fenestration Canada) enabling Method B are released (expected in mid-2025). Further details on the phase out of Method A will be confirmed once Method B tools are made available."

Provides a little more defined timeline of at least 24 months while keeping it open??
Several years sounds like at least three or more??

If Adrian or Jonathan have comments, I will leave it to them to chime in.



Terry Adamson

Technical Director / Directeur Technique

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On Mon, Mar 31, 2025 at 1:46\u8239 PM Li, Charling
<charling.li@vancouver.ca> wrote:

Hi folks, a reminder to please provide me with your recommendation on the wording of 3.1.1 in the EMGs and whether you have a recommendation about the phase out timing for Method A. I need to finalize the language in the EMGs wording by end of today.

Cheers,
Charling

From: Terry Adamson <terry@fenestrationcanada.ca>

Sent: Wednesday, March 26, 2025 12:24 PM

To: Li, Charling <charling.li@vancouver.ca>

Cc: Jonathan Layton <jonathan@laytonconsulting.com>; Adrian Edge

<adrian@fenestrationcanada.ca>; Isabelle Clewley <isabelle@fenestrationcanada.ca>

Subject: Re: Thermal Modelling Project EMG Discussion Minutes

Hi Charling

Jomo has been taking a well-deserved vacation. I think he is back today. We will be getting together soon and will get back to you asap.

Terry Adamson

Technical Director / Directeur Technique

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On Wed, Mar 26, 2025 at 12:09\u00239 PM Li, Charling
<charling.li@vancouver.ca> wrote:

Hi folks, hope you're enjoying March break! A reminder to get back to me about the wording in section 3.1.1. of the draft EMGs (attached), and whether you have a recommendation from the technical committee about the phase out timing for Method A. My final date for making any edits to the EMGs wording is next Monday March 31st.

With appreciation,
Charling

From: Li, Charling
Sent: Tuesday, March 18, 2025 9:35 AM
To: Terry Adamson <terry@fenestrationcanada.ca>
Cc: Isabelle Clewley <isabelle@fenestrationcanada.ca>; Jonathan Layton <jonathan@laytonconsulting.com>; Adrian Edge <adrian@fenestrationcanada.ca>
Subject: RE: Thermal Modelling Project EMG Discussion Minutes

Thanks for the heads up, Terry.

Cheers,
Charling

From: Terry Adamson <terry@fenestrationcanada.ca>
Sent: Tuesday, March 18, 2025 9:33 AM
To: Li, Charling <charling.li@vancouver.ca>
Cc: Isabelle Clewley <isabelle@fenestrationcanada.ca>; Jonathan Layton <jonathan@laytonconsulting.com>; Adrian Edge <adrian@fenestrationcanada.ca>
Subject: Re: Thermal Modelling Project EMG Discussion Minutes

Good morning Charling,
Jonathan is on vacation until mid next week. We will get back to you after we are able to discuss.
Will try to have a response by Friday next week.
Thanks,

Terry Adamson

Technical Director / Directeur Technique

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On Fri, Mar 14, 2025 at 4:47\u0023239 PM Li, Charling
<charling.li@vancouver.ca> wrote:

Hi folks, was there anything from your recent modelling committee meeting that addressed the wording in section 3.1.1. of the draft EMGs?

Please also let me know if there was a recommendation from the technical committee about the phase out timing for Method A.

Thanks,
Charling

From: Li, Charling
Sent: Monday, March 3, 2025 4:12 PM
To: Isabelle Clewley <isabelle@fenestrationcanada.ca>; Jonathan Layton <jonathan@laytonconsulting.com>; Terry Adamson <terry@fenestrationcanada.ca>; Adrian Edge <adrian@fenestrationcanada.ca>
Subject: RE: Thermal Modelling Project EMG Discussion Minutes
Importance: High

Hi folks,

Thanks for your feedback and support on this work and I'm very happy to say we're in the home stretch to finalize the changes to the Energy Modelling Guidelines v3.0 as it is slated for Council decision in a month's time. I wanted to run one last change our technical consultants and others have recommended to Section 3.11 Acceptable Approaches. The change clarifies how to deal with thermal performance of opaque assemblies by

referencing NECB 2020 Section 3.1.1.7 instead of the previously provided direction. We aim to align with existing guidance wherever possible. The appropriate snippet is attached for your review.

As we are rapidly completing this work, **can you provide feedback by Friday March 7th**; or otherwise please me know if you think a more prolonged discussion is required, in which case we would consider holding off this change for a future version if additional considerations are required.

The snippet also includes Section 3.2 Fenestration and Doors which reflects the feedback that this group has provided in the past, that I'm including as an FYI. I'll also note that the EMGs are only used for Part 3 buildings (buildings that meet VBBL 10.2.1.2 and 10.2.1.3) for energy compliance, and are not to be used by projects falling under Part 9 detached residential buildings. The existing VBBL Note A-10.2.2.6. on Calculating the Effective Thermal Resistance of Building Envelope Assemblies which is applicable for Part 9 (VBBL 10.2.2.5 typologies) remains unchanged for that building type.

I recognize I'm requesting a quick turn around – thank you in advance
\\u-10179 ?\\u-8694 ?

Charling

From: Li, Charling

Sent: Wednesday, December 4, 2024 9:47 AM

To: Isabelle Clewley <isabelle@fenestrationcanada.ca>; Jonathan Layton <jonathan@laytonconsulting.com>; Terry Adamson <terry@fenestrationcanada.ca>; Adrian Edge <adrian@fenestrationcanada.ca>

Subject: RE: Thermal Modelling Project EMG Discussion Minutes

Thanks all for the meeting, and to Isabelle for the notes.

1. @Jomo can you please confirm the correct reference from NFRC 100 for spandrel calculations? Is there a specific year of the standard or a section we can point to? Currently the wording is as follows, please provide your suggestion.

Performance of spandrel panels may be determined using the Reference Procedure for Simulating Spandrel U-Factors, developed for Fenestration BC;

2. Re: a sunset timeline for the Method A (once Method B is released) – I prefer not to commit to a defined phase out period within the EMG, but to indicate that a phase out period will be provided once we have Method B tools available. I'll look forward to working with your group to firm up details and communication to industry with the release of Method B. Here's the current draft language for this section.

s.13(1)

Please let me know if you have edits or suggestions to the above.

Cheers,

Charling

From: Isabelle Clewley <isabelle@fenestrationcanada.ca>
Sent: Monday, November 25, 2024 11:40 AM
To: Jonathan Layton <jonathan@laytonconsulting.com>; Li, Charling <charling.li@vancouver.ca>; Terry Adamson <terry@fenestrationcanada.ca>; Adrian Edge <adrian@fenestrationcanada.ca>
Subject: Thermal Modelling Project EMG Discussion Minutes

Hi all,

Here are the minutes from last week's discussion meeting if you need them.

Thank you,

Isabelle Clewley

Member Services Advisor / Conseillère aux membres

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From: "Pander, Sean" <sean.pander@vancouver.ca>
To: "Li, Charling" <charling.li@vancouver.ca>
Date: 1/15/2025 10:23:44 AM
Subject: RE: Update to the COV EMG v3.0

I agree – I had missed the implication of “public review period” and should have known that would include the draft text. Thanks for the background!

Sean Pander, P.Eng | Manager, Green & Resilient Building Branch
(he/him/his)
Planning, Urban Design & Sustainability | City of Vancouver
City Hall, 7th Floor | 453 West 12 Ave, Vancouver, BC V5Y 1V4
t: 604.871.6542

sean.pander@vancouver.ca

I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səfílwətaʔt / səfílwitl̓h (Tsleil-Waututh) nations.

From: Li, Charling
Sent: Wednesday, January 15, 2025 9:49 AM
To: Pander, Sean ; Enright, Patrick
Subject: Re: Update to the COV EMG v3.0

Hi, we've put out 2 drafts of the proposed changes to the EMGs out already, one in Oct 2023 and another in September 2024 as part of the VBBL review, and have sought industry input through the engagement process outlined above. Hundreds of comments were received and processed, with only 1 final topic being resolved between now and whenever the VBBL will be presented to council. I don't recommend putting out yet another draft before we have it ready for council.

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From: Pander, Sean <sean.pander@vancouver.ca>
Sent: Tuesday, January 14, 2025 5:37:58 PM
To: Li, Charling <charling.li@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>
Subject: RE: Update to the COV EMG v3.0

Any reason we cannot distribute the proposed changes – we typically seek industry input on the specific code changes prior to getting approval; why not the EMG?

Sean Pander, P.Eng | Manager, Green & Resilient Building Branch
(he/him/his)
Planning, Urban Design & Sustainability | City of Vancouver
City Hall, 7th Floor | 453 West 12 Ave, Vancouver, BC V5Y 1V4
t: 604.871.6542

sean.pander@vancouver.ca

I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səfílwətaʔt / səfílwitl̓h (Tsleil-Waututh) nations.

From: Li, Charling <charling.li@vancouver.ca>
Sent: Tuesday, January 14, 2025 4:49 PM
To: Enright, Patrick <Patrick.Enright@vancouver.ca>; Pander, Sean <sean.pander@vancouver.ca>;
McCall, Gregory <Gregory.McCall@vancouver.ca>
Cc: Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>; Lang, Micah
<Micah.Lang@vancouver.ca>
Subject: RE: Update to the COV EMG v3.0

Hello, I've provided a response to Eoghan and others below, and for the COV team I will provide this **internal summary of the engagement process** that has already taken place to create this update to the EMGs, which has been supported by Focal Engineering as our external consultant.

- Workshop 1 in **April 2023** : 1.5 hour workshop with 45 professionals in attendance, with 190 comments received through Miro
- Workshop 2 in **Oct 2023**: 1.5 hour workshop with 97 professionals in attendance, with 144 comments received via email through a 6 week period following the workshop
- Corridor pressurization focus group – **April 2024**: 22 attended to discuss current state of knowledge on effectiveness of corridor pressurization in the context of current airtight and compartmentalized residential buildings
- 2025 VBBL public review period in **Fall 2024**: 22 comments were received through the public review process.
- Fenestration working group held between Nov 2023 and Nov 2024 – working with 5 representatives from Fenestration Canada, National Fenestration Research Council, and several local energy modellers to develop modelling compliance methodologies to resolve differences between lab-tested fenestration performance characteristics based on standard sizes and actual product sizes

Thanks,
Charling

From: Li, Charling
Sent: Tuesday, January 14, 2025 4:45 PM
To: Eoghan Hayes <ehayes@edgec.ca>
Cc: Pander, Sean <sean.pander@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>;
Lang, Micah <Micah.Lang@vancouver.ca>; donal@edgec.ca; Marina Timmins <marina@edgec.ca>;
Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>; hmcqueen@qualex.ca; anunan@udi.org;
MHHowey@anthemproperties.com; SarahB@adera.com; Guenter Michael
<MGuenter@concertproperties.com>; Jay Chadha <jchadha@udi.org>; cthorn@stranddev.com; Jason
Nelson <jason@edgec.ca>
Subject: RE: Update to the COV EMG v3.0

Hi Eoghan,

Happy new year to you as well. We appreciate you reaching out to discuss the transition to the next EMGs. I'll respond to your comments in green text below.

Cheers,
Charling

From: Eoghan Hayes <ehayes@edgec.ca>
Sent: Friday, January 10, 2025 11:47 AM
To: Li, Charling <charling.li@vancouver.ca>
Cc: Pander, Sean <sean.pander@vancouver.ca>; Lang, Micah <Micah.Lang@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>; Donal Dignan <donal@edgec.ca>; Marina Timmins <marina@edgec.ca>; Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>; Henry McQueen <hmcqueen@qualex.ca>; Annika Nunan <anunan@udi.org>; Melissa Howey <MHowey@anthemproperties.com>; Sarah Bingham <SarahB@adera.com>; Guenter Michael <MGuenter@concertproperties.com>; dnakaoka@axiombuilders.ca; James Howard <JHoward@woodbridge.ca>; Dan Gronross <dgronross@axiombuilders.ca>; Jay Chadha <jchadha@udi.org>; Guenter Michael <MGuenter@concertproperties.com>; Cameron Thorn <cthorn@stranddev.com>; Jason Nelson <jason@edgec.ca>
Subject: RE: Update to the COV EMG v3.0

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Hi Charling

Happy new year. CC some folks from industry here.

Thank you for your response and confirming the anticipated timeline for the approval and release of Version 3 of the Energy Modeling Guidelines (EMGs). I appreciate the update and your openness to answer specific questions.

As a building performance consultancy working closely with the development community, I wanted to share some concerns regarding the upcoming changes and propose some next steps that may help with the transition:

- 1. Access to Proposed Updates:** We understand from a post on LinkedIn in December, Focal engineering have completed the final draft of the guideline. Without access to the draft or a summary of the proposed updates, it is challenging to assess the impacts on building design, construction, and associated costs. Early access to even a high-level overview would help us, as well as the broader development community, prepare for these changes more effectively. **We will release the final proposed EMGs along with the public council report package once we have a Council date for the 2025 VBBL package of changes. This is now expected to be sometime in April but is subject to change beyond our team's control. If approved, the next VBBL and EMGs are anticipated to be effective after a 3-6 month period, which puts us into an effective date around July to Sept. We will communicate this as soon as it's been finalized.**
- 2. Intent of the Updated Guidelines:** Could you share more about the intent behind the updates

- to the EMGs? For example, are they primarily focused on stricter performance targets, aligning with broader policy goals like carbon reduction, or addressing specific challenges identified in the 2018 version? Understanding the intent would help guide our preparation and communication with clients. **As indicated in our modeler engagement workshops held in April and October 2023, the goals of the update are:**
 - **Improve consistency & clarity between modellers – clarify where there are multiple interpretations or gaps in the guidelines**
 - **Focus on updating methodology and modelling strategies, and maintain straightforward aspect to guidelines**
 - **No major changes to limits and requirements**
3. **Industry Preparedness:** With the anticipated effective date of May 2025, aligning with the next Vancouver Building By-Law (VBBL), it is crucial for all stakeholders to understand the implications well in advance. Would it be possible for the City to host an industry information session or provide interim documentation summarizing key changes before the official release? **Once we have Council approval of the proposed changes (currently anticipated for April 2025), we will set up information sessions to disseminate the changes.**
4. **Collaboration Opportunities:** If the City is seeking further input or feedback from energy modeling consultants or the wider industry during this interim period, we would be happy to participate and share insights from our work and experience to date. Some folks on this chain may also be able to share some insights on the constructability impacts. **The most recent public review period for v3.0 of the EMGs were held in Fall 2024 and we are grateful to many who provided feedback through this period and through the workshops in 2023. Our current focus is to finalize v3.0 for approval and dissemination based on feedback received during the public review. We continue to welcome feedback on the EMGs but these may be held for analysis for future versions.**

Please let me know if any of the above options are possible, or if there are other ways we can collaborate to ensure a smooth adoption of the updated guidelines. **Understood and we will be in touch once we have confirmed dates and timelines.**

Thank you again for your time and support. I look forward to your thoughts.

Kind Regards
Eoghan Hayes

Best regards,
Eoghan Hayes, P.Eng, BEMP, RESET AP
Managing Director
M: [+1\(604\)-338-1063](tel:+16043381063)
T: [+1\(888\)-939-3343](tel:+18889393343) Ext. [701](tel:+18889393343)
www.edgesustainability.com [edgesustainability.com]
601–211 East Georgia St., Vancouver BC, V6A 1Z6
Healthy • Smart • Sustainable



Kindly note that our new address is now **6th Floor - 211 East Georgia St., Vancouver BC, V6A 1Z6**. We appreciate your attention to updating your records accordingly.

From: Li, Charling <charling.li@vancouver.ca>
Sent: December 18, 2024 8:00 AM
To: Eoghan Hayes <ehayes@edgec.ca>
Cc: Pander, Sean <sean.pander@vancouver.ca>; Lang, Micah <Micah.Lang@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>; Donal Dignan <donal@edgec.ca>; Marina Timmins <marina@edgec.ca>; Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>
Subject: RE: Update to the COV EMG v3.0

Hi Eoghan, version 3 of the EMGs is almost ready. It will be brought to council in Feb 2025 so the latest version will be provided then. Its effective date is anticipated to be May 2025 to align with the next VBBL (pending Council approval in Feb).

I hope that helps. If you have specific questions about the EMGs please reach out.

Cheers,

Charling

From: Eoghan Hayes <ehayes@edgec.ca>
Sent: Wednesday, December 18, 2024 7:13 AM
To: Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>
Cc: Pander, Sean <sean.pander@vancouver.ca>; Lang, Micah <Micah.Lang@vancouver.ca>; Li, Charling <charling.li@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>; Donal Dignan <donal@edgec.ca>; Marina Timmins <marina@edgec.ca>
Subject: RE: Update to the COV EMG v3.0

Hello all

I hope you are keeping well and wrapping up for the holidays.

I understand the COV EMG version 3 guideline is ready ? If so, can you please send a copy or a link to where we can find the final version ?

Cheers

E

Best regards,
Eoghan Hayes, P.Eng, BEMP, RESET AP
Managing Director

M: [+1\(604\)-338-1063](tel:+1(604)338-1063)

T: [+1 \(888\) 939 3343](tel:+1(888)939-3343) Ext. [701](tel:+1(888)939-3343)

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Kindly note that our new address is now 6th Floor - 211 East Georgia St., Vancouver BC, V6A 1Z6. We appreciate your attention to updating your records accordingly.

From: Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>

Sent: August 15, 2024 10:30 AM

To: Eoghan Hayes <ehayes@edgec.ca>

Cc: Pander, Sean <sean.pander@vancouver.ca>; Lang, Micah <Micah.Lang@vancouver.ca>; Li, Charling <charling.li@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>

Subject: RE: Update to the COV EMG v3.0

Hi Eoghan,

The “below queries” don’t show up in my email but I will assume it is a low rise residential case. My work is currently focused on low rise residential (4 stories and under) and I would slot it into two areas with regard to electrical service.

1. Right sizing new services in Multiplexes, with a goal of lowering the average cost and enabling the use of a pole (vs ground) transformer. This is new work this year for me. Here we see 200-600A single phase service feeding 100A panels in (3-8 dwellings) on the shared service. The diversity factor is assumed to be similar to a townhouse of similar size. Work is just starting on a guide to right size services, here are strategies being explored:
 - a. Combined heating, hot water (and cooling in some cases) heat pump systems
 - b. Heat pump clothes dryers
 - c. EV load management (a range of solutions)
 - d. Other options are being explored
2. Existing single family and small multifamily buildings (up to 6 homes), I worked with BC Hydro on pilots for the last few years, operationalizing the learning is still underway. Here we are looking at 100-125A service typically in existing single family with a dedicated service. A 200A service can fully electrify in the cases I have seen without any extra work. For 125A typically only one intervention is needed. 100A is doable but takes extra work.
 - a. Here the work is mostly about upgrades for space heating (30A new load) and hot water to a heat pump or electric tank (15-30A new load). Sometimes also

- adding an EV charging option (20A-40A)
- b. The work looks at circuit sharing, and unused circuits (a suite no longer in use).
- c. We look at what is present and can be shared, a hot tub, electric patio heat are all examples of secondary uses that can be shared with a primary use
- d. We have started to use the measured energy process from BC Hydro to understand the real usage

I am heading off on vacation for two weeks, but when I return in September I am happy to chat more,

Chris

From: Enright, Patrick <Patrick.Enright@vancouver.ca>
Sent: Thursday, August 15, 2024 9:59 AM
To: Eoghan Hayes <ehayes@edgec.ca>
Cc: Pander, Sean <sean.pander@vancouver.ca>; Lang, Micah <Micah.Lang@vancouver.ca>; Higgins, Chris (Sustainability) <Chris.Higgins@vancouver.ca>; Li, Charling <charling.li@vancouver.ca>
Subject: RE: Update to the COV EMG v3.0

Hi Eoghan,

Thanks for the call just now. Here are the items we discussed:

1. CEAP report – here is the link to the climate plan report materials (unrelated to Council’s eventual amendment on allowing gas in new construction): <https://council.vancouver.ca/20240723/regu20240723ag.htm> (see Report #3 on the Council Agenda)
2. Managing electrical loads and minimizing BC Hydro service sizes – please connect with Chris Higgins (cc’d), who has been working with BC Hydro on guidance for optimizing electrical service in new multiplexes, and avoiding service upgrades in existing homes;
3. EMGs v3 – these will be up for comment on our VBBL shortly, here: <https://vancouver.ca/your-government/vancouver-building-bylaw.aspx> (has been sent to IT last week, should be uploaded shortly)
4. Article on internal loads – please feel free to send in advance, if we have time Charling and I will review

Please let us know if there is anything else we can provide.

Sincerely,

Patrick Enright, P.Eng (he/him/his)
Team Lead, Small Existing and New Developments
Green & Resilient Buildings Branch | Sustainability Group
Planning, Urban Design & Sustainability | City of Vancouver
patrick.enright@vancouver.ca | 604.871.6158

For more information on green buildings, please visit <http://vancouver.ca/zeroemissions>

I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̓əm (Musqueam [musqueam.bc.ca]), Skwxwú7mesh (Squamish [squamish.net]), and səłilwətaʔ / səłilwítulh (Tsilil-Waututh [twnation.ca]) nations.

From: Eoghan Hayes <ehayes@edgec.ca>
Sent: Monday, August 12, 2024 7:32 AM

To: Enright, Patrick <Patrick.Enright@vancouver.ca>
Cc: Pander, Sean <sean.pander@vancouver.ca>; Lang, Micah <Micah.Lang@vancouver.ca>
Subject: FW: Update to the COV EMG v3.0

Morning Patrick

CC Sean and Micah

Can you please assist with the below queries. Also, there is an opportunity to challenge the status quo here on the size of an electrical service for a home as it relates to diversity of loads. There are ways to ensure diversity of load to ensure we you can keep the size of

When I designed the 777 Dunsmuir retrofit (KPMG) DT about 10 years ago (Which I understand Sean attended the site recently) , the electrical engineer wanted to upgrade the electrical service to the building to cover the additional electrical capacity of the heat pumps / heat recovery chillers which would have killed the project financially as it would have cost an additional \$500K.

In the plant room next to the heat recovery chillers was an 800 Ton peak cooling chiller that only ran for 2 weeks of the year in peak summer, we used this electrical connected to feed our heat recovery chillers as they do not operate in peak summer. This saved the project financially to the point where the client proceeded.

The same approach needs to be explored for homes in my view , two key electrical consuming devices in a home that only operate sporadically are the cooker provided it's electrical and the shower. We should explore this diversity on the single-family front and see if we can get it under the limits of requiring this additional electrical infrastructure.

Best regards,
Eoghan Hayes, P.Eng, BEMP, RESET AP , LEED AP BD&C
Managing Director
M: [+1 \(604\) 338 1063](tel:+16043381063)
T: [+1 \(888\) 939 3343](tel:+18889393343) Ext. [701](tel:+1701)
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Kindly note that our new address is now 6th Floor - 211 East Georgia St., Vancouver BC, V6A 1Z6. We appreciate your attention to updating your records accordingly.

From: "Li, Charling" <charling.li@vancouver.ca>
To: "Williams, Scott B OHCS:EX" <Scott.B.Williams@gov.bc.ca>
"Wilma Leung" <wileung@bchousing.org>
"Lau, Toby" <Toby.Lau@bchydro.com>
CC: "Enright, Patrick" <Patrick.Enright@vancouver.ca>
Date: 1/22/2026 4:50:56 PM
Subject: Update to COV Energy Modelling Guidelines
Attachments: PDS - SUS - GRBT - EMGs v3.0 - SOW - draft 20230104.DOCX

Hi folks,

I hope you had a wonderful new start to the year! You may be aware that we are planning to update the City of Vancouver Energy Modelling Guidelines for Part 3 new construction and will be going out to market to have a consultant team lead the analysis and recommendations for change. The draft scope of work is attached for your information and feedback if you have the time. **We're also looking for funding partners for this work, please let me know if there's interest from your organization.**

****Please do not share the scope of work since it has not been released to market yet. ****

Thanks and let me know if you have any questions or feedback!

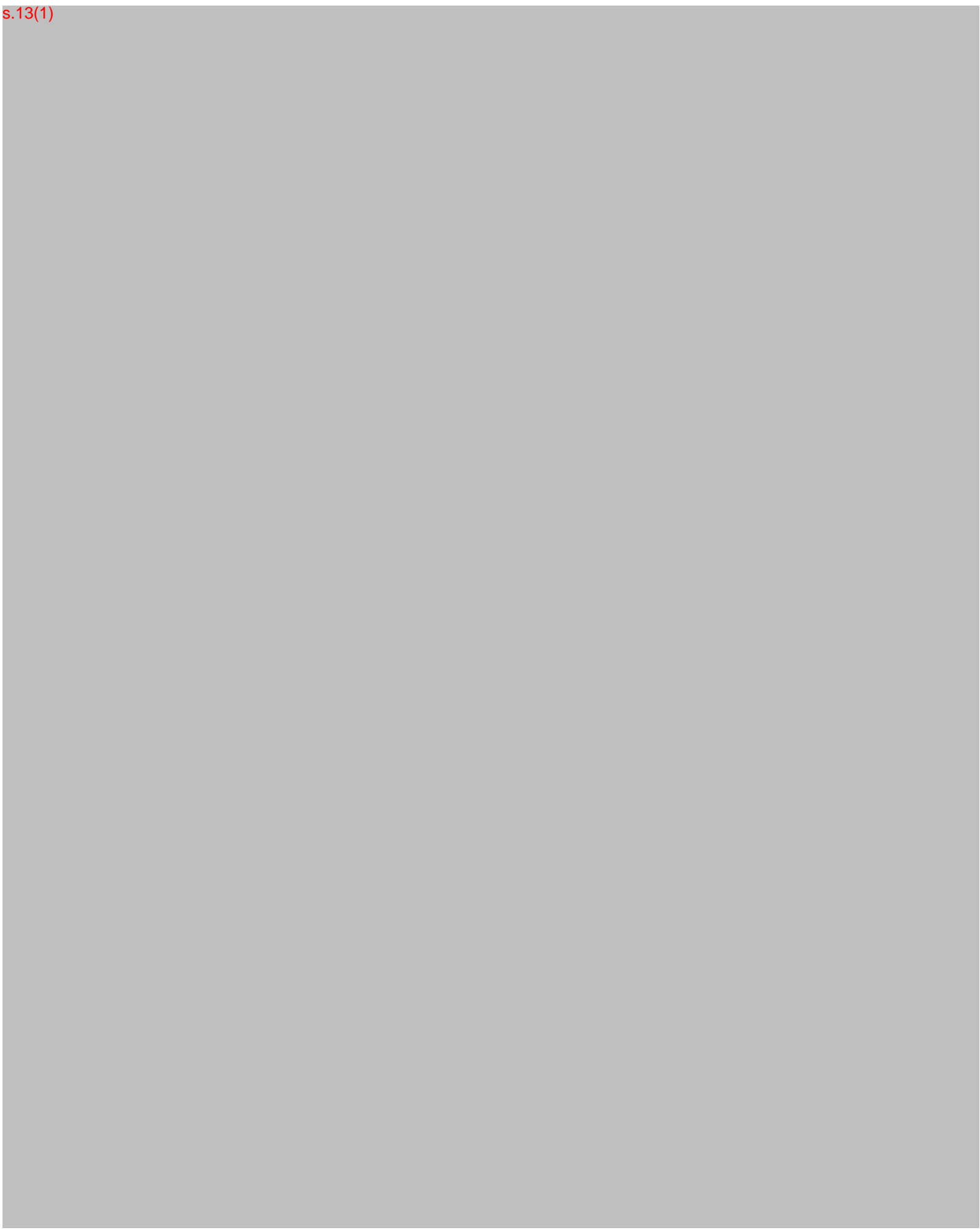
Charling

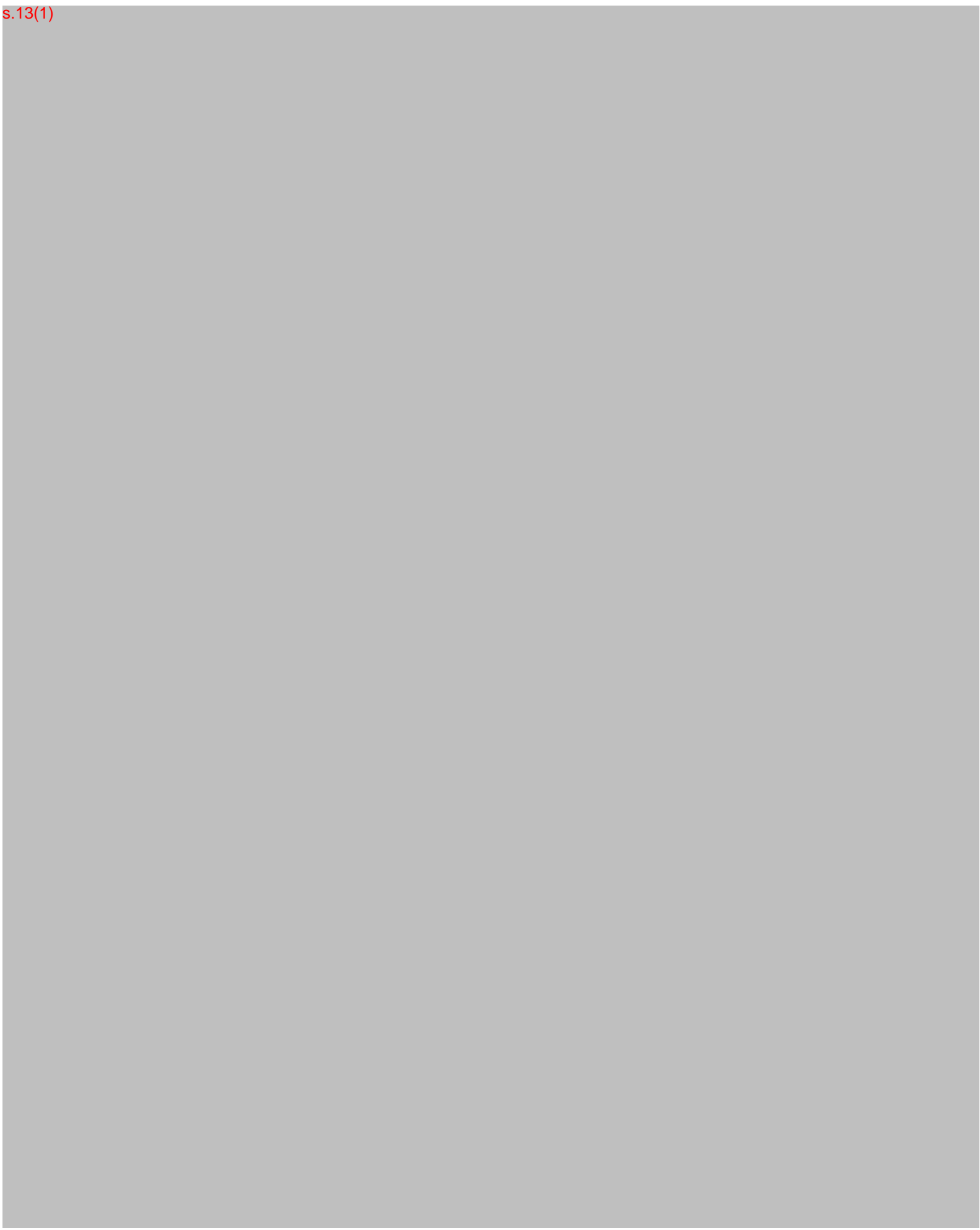
Charling Li, P.Eng., M.Urb. | Green Building Engineer
(she/her/hers)
Sustainability Group | Planning, Urban Design & Sustainability | City of Vancouver
Charling.Li@vancouver.ca | 604.871.6833

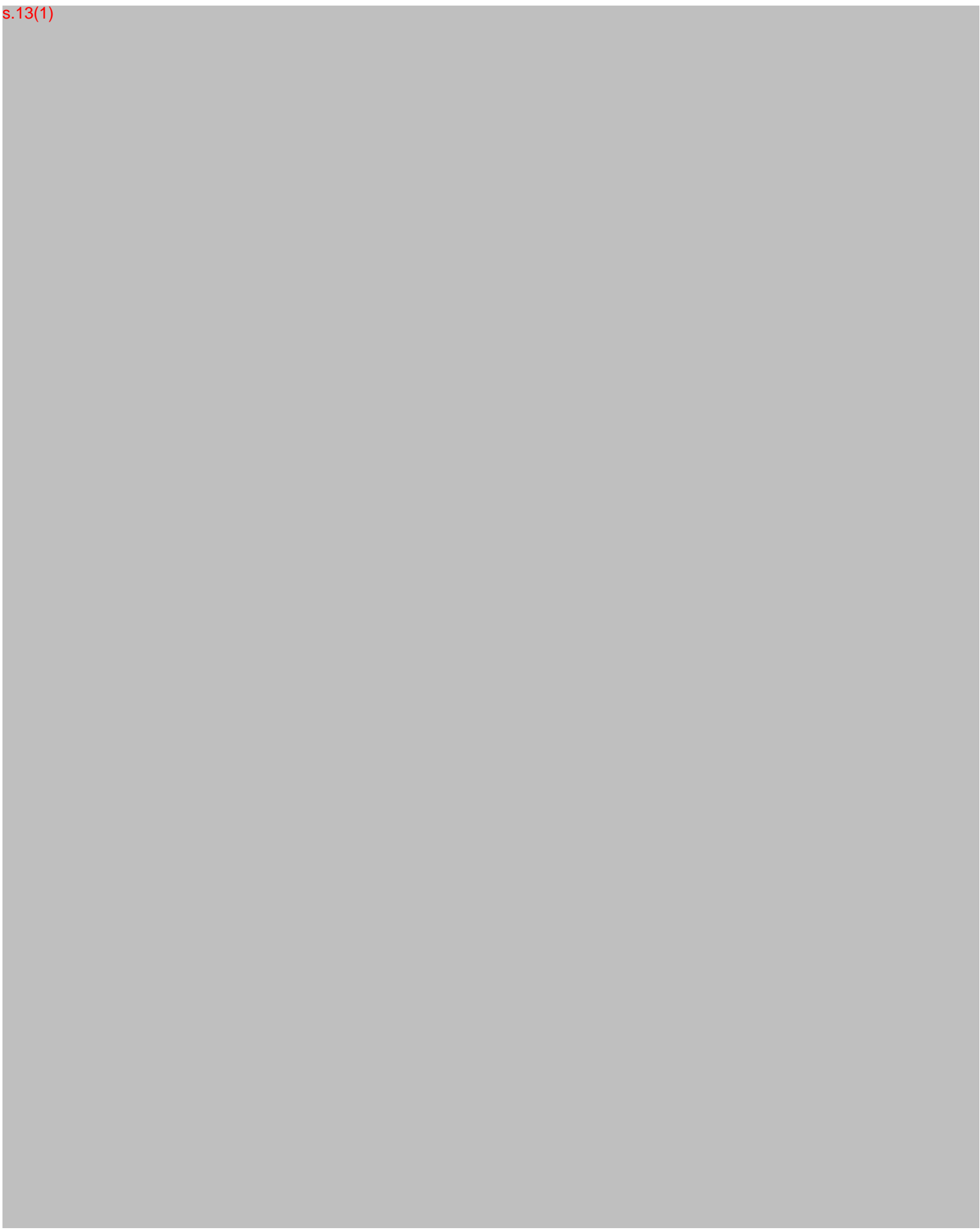
[Learn about recently approved green building changes for Part 3 New Construction here](#)

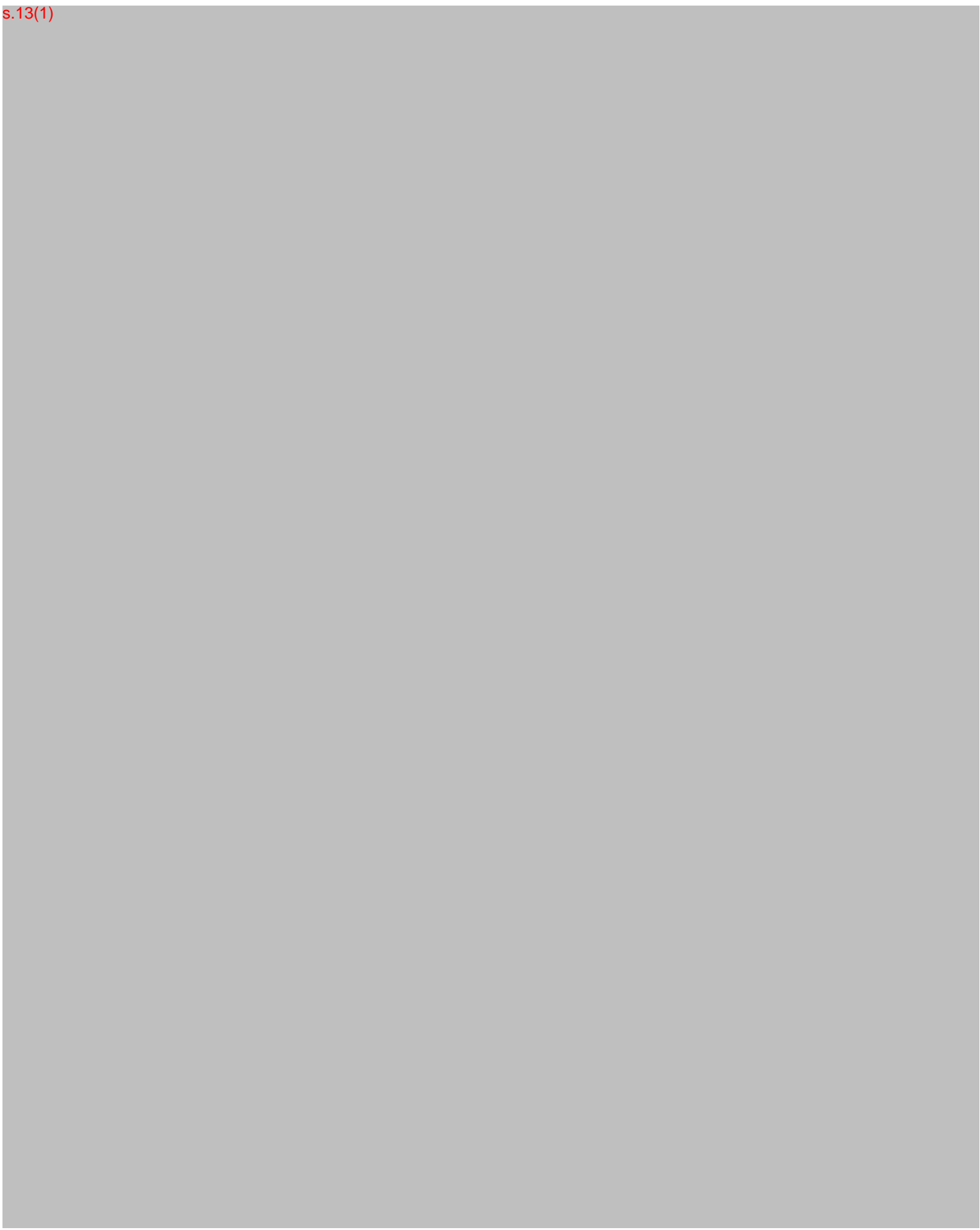
For more information on green buildings, please visit <http://vancouver.ca/zeroemissions>

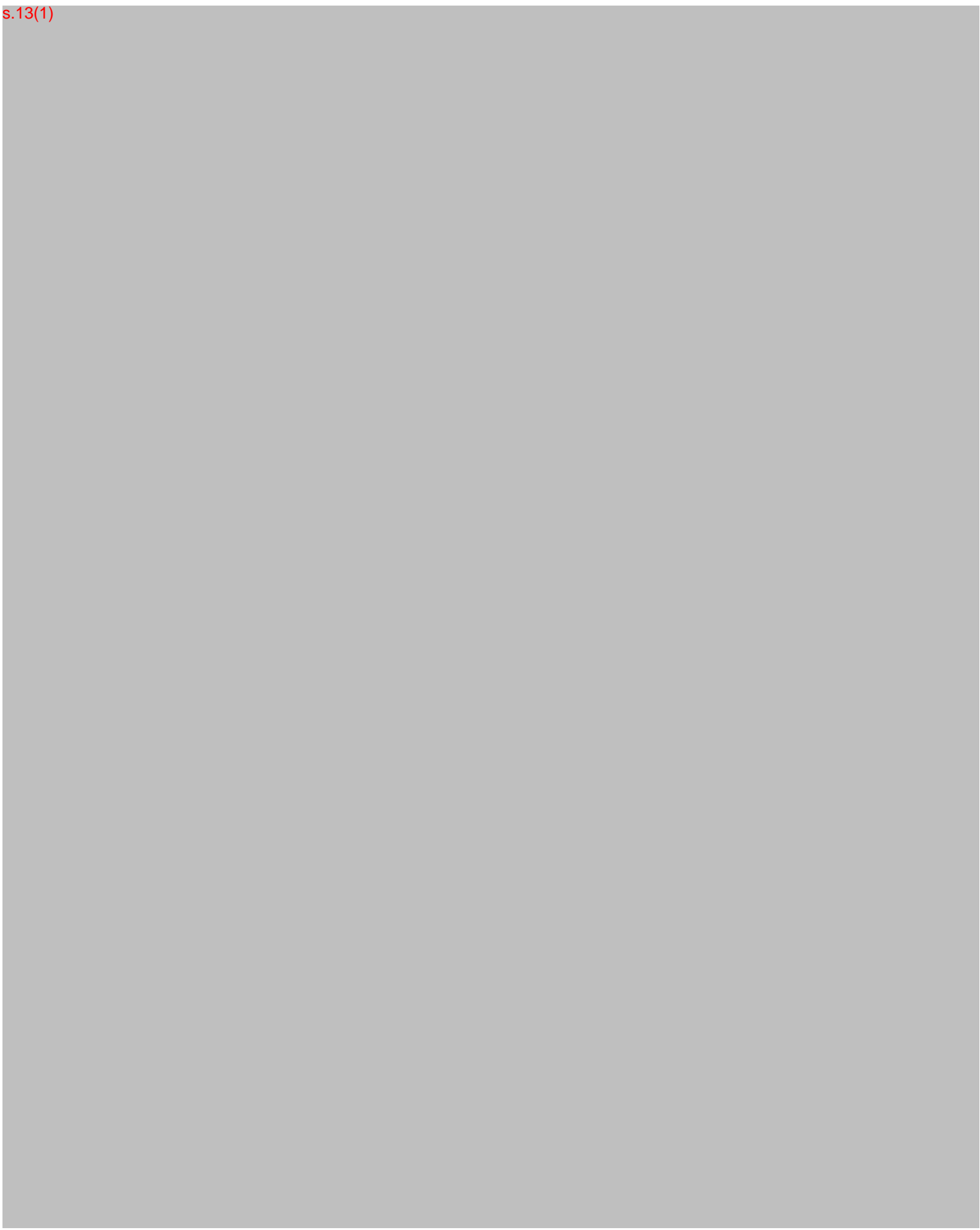
I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətaʔ / səlilwítulh (Tsleil-Waututh) nations.

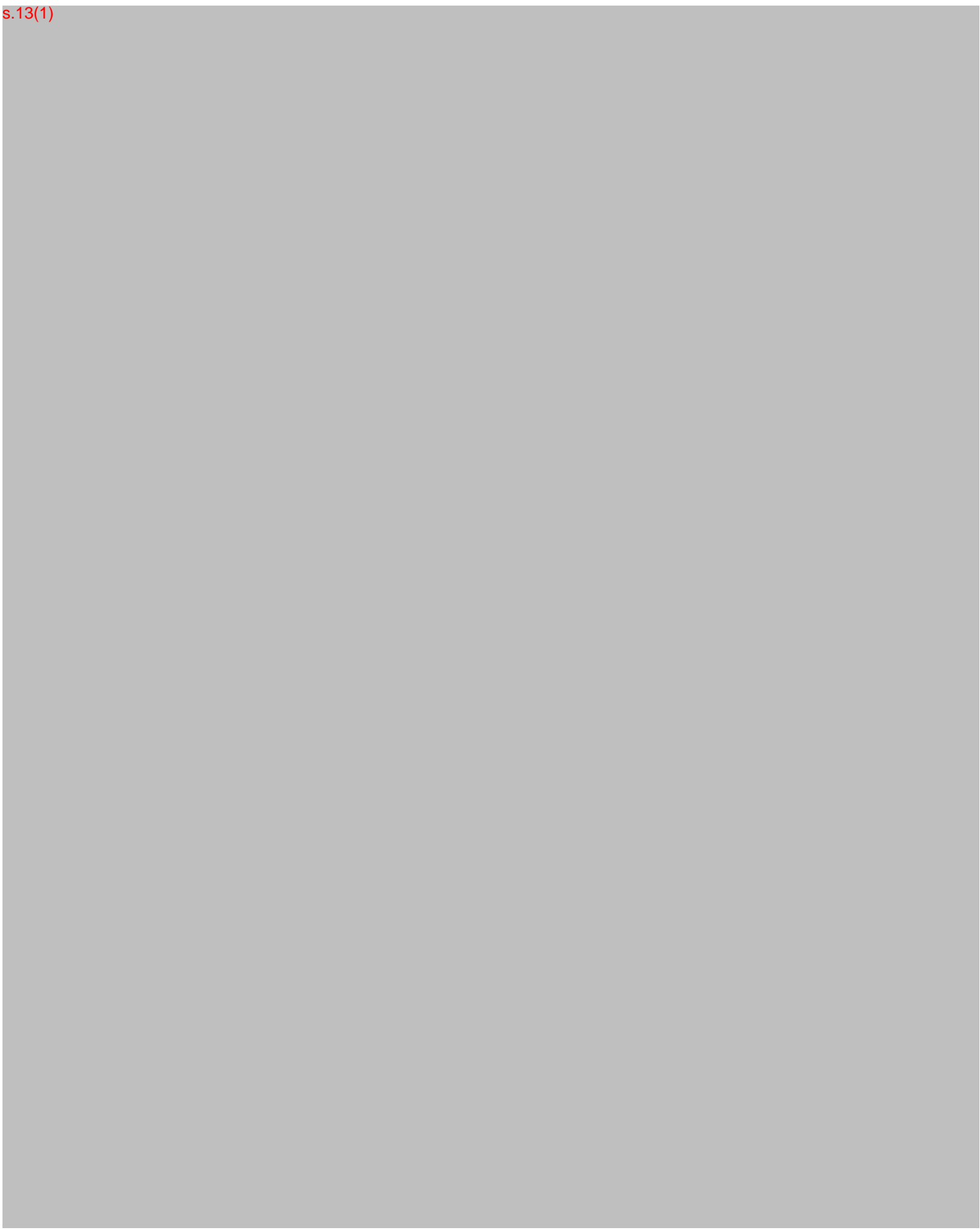












Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)			100	\$0.00	0
Project Preparation/ Framework				100	\$0.00	0
Subtotal						\$0.00
Workshop 1						
Preparation				100	\$0.00	0
Host				100	\$0.00	0
Wrap Up				100	\$0.00	0
Subtotal					\$0.00	
Online Survey						
Prepare & Release				100	\$0.00	0
Review & Summarize				100	\$0.00	0
Subtotal					\$0.00	
Draft Guideline Updates						
Meetings - Progress Updates (6)				100	\$0.00	0
Group 1 - Analysis & Draft				100	\$0.00	0
Group 2 - Analysis & Draft				100	\$0.00	0
Group 3 - Analysis & Draft				100	\$0.00	0
Energy Model Testing				100	\$0.00	0
Preliminary Guidelines & Report				100	\$0.00	0
Subtotal					\$0.00	
Workshop 2						
Preparation				100	\$0.00	0
Host				100	\$0.00	0
Subtotal					\$0.00	
Project Wrap Up						
Finalize Report				100	\$0.00	0
Finalize Guidelines				100	\$0.00	0
Wrap Up Meeting				100	\$0.00	0
Subtotal					\$0.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Total	\$68,600.00	\$66,800.00	\$1,800.00	\$0.00
-------	-------------	-------------	------------	--------

Invoice Subtotal	\$1,800.00
GST	\$90.00
Invoice Total	\$1,890.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					100
Project Preparation/ Framework						100
Subtotal						
Workshop 1						
Preparation						100
Host						100
Wrap Up						100
Subtotal						
Online Survey						
Prepare & Release						50
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						100
Group 1 - Analysis & Draft						50
Group 2 - Analysis & Draft						100
Group 3 - Analysis & Draft						100
Energy Model Testing						100
Preliminary Guidelines & Report						100
Subtotal						
Workshop 2						
Preparation						100
Host						100
Subtotal						
Project Wrap Up						
						100
Total	\$68,600.00	\$0.00	\$3,750.00		\$64,850.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Date: 4/30/2023

Invoice Subtotal	\$3,750.00
GST	\$187.50
Invoice Total	\$3,937.50

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*



Invoice: 877
Invoices Net 30 Days
 Date: 5/31/2023

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						50
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						75
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						100
Energy Model Testing						100
Preliminary Guidelines & Report						100
Subtotal						
Workshop 2						
Preparation						100
Host						100
Subtotal						
Project Wrap Up						
						100
Total	\$68,600.00	\$10,350.00	\$9,250.00		\$49,000.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Date: 5/31/2023

Invoice Subtotal	\$9,250.00
GST	\$462.50
Invoice Total	\$9,712.50

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						50
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						50
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						100
Preliminary Guidelines & Report						100
Subtotal						
Workshop 2						
Preparation						100
Host						100
Subtotal						
Project Wrap Up						
						100
Total	\$68,600.00	\$19,600.00	\$7,250.00		\$41,750.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Date: 6/30/2023

Invoice Subtotal	\$7,250.00
GST	\$362.50
Invoice Total	\$7,612.50

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						50
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						25
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						100
Preliminary Guidelines & Report						50
Subtotal						
Workshop 2						
Preparation						100
Host						100
Subtotal						
Project Wrap Up						
						100
Total	\$68,600.00	\$26,850.00	\$6,900.00		\$34,850.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Date: 7/31/2023

Invoice Subtotal	\$6,900.00
GST	\$345.00
Invoice Total	\$7,245.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						50
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						0
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						100
Preliminary Guidelines & Report						25
Subtotal						
Workshop 2						
Preparation						100
Host						100
Subtotal						
Project Wrap Up						
						100
Total	\$68,600.00	\$33,750.00	\$3,825.00		\$31,025.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Date: 8/31/2023

Invoice Subtotal	\$3,825.00
GST	\$191.25
Invoice Total	\$4,016.25

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						50
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						0
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						50
Preliminary Guidelines & Report						25
Subtotal						
Workshop 2						
Preparation						50
Host						100
Subtotal						
Project Wrap Up						
Finalize Report						100
Finalize Guidelines						100
Wrap Up Meeting						100
Subtotal						

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Total	\$68,600.00	\$37,575.00	\$6,050.00	\$24,975.00
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Invoice Subtotal	\$6,050.00
GST	\$302.50
Invoice Total	\$6,352.50

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						0
Review & Summarize						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						0
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						25
Preliminary Guidelines & Report						0
Subtotal						
Workshop 2						
Preparation						0
Host						0
Subtotal						
Project Wrap Up						
Finalize Report						100
Finalize Guidelines						100
Wrap Up Meeting						100
Subtotal						

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Total	\$68,600.00	\$43,625.00	\$8,700.00	\$16,275.00
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Invoice Subtotal	\$8,700.00
GST	\$435.00
Invoice Total	\$9,135.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						0
Review & Summarize						0
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						0
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						0
Preliminary Guidelines & Report						0
Subtotal						
Workshop 2						
Preparation						0
Host						0
Subtotal						
Project Wrap Up						
Finalize Report						25
Finalize Guidelines						0
Wrap Up Meeting						100
Subtotal						

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Total	\$68,600.00	\$56,500.00	\$9,275.00	\$2,825.00
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Invoice Subtotal	\$9,275.00
GST	\$463.75
Invoice Total	\$9,738.75

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*



Invoice: 1340
Invoices Net 30 Days
 Date: 3/12/2025

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Current Percent	Remaining Amount	Remaining Percent
Guideline and Recommendation Update			s.21(1)		\$0.00	0
Total	\$7,400.00	\$6,660.00	\$740.00		\$0.00	

Invoice Subtotal	\$740.00
GST	\$37.00
Invoice Total	\$777.00

Aging Summary

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
1340	03/12/2025	777.00	777.00				
	Total	777.00	777.00	0.00	0.00	0.00	0.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
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Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Current Percent	Remaining Amount	Remaining Percent
Additional Future Weather Energy Analysis						50
Recommendations Report Revisions						100
Total	\$9,400.00	\$0.00	\$3,800.00		\$5,600.00	

Invoice Subtotal	\$3,800.00
GST	\$190.00
Invoice Total	\$3,990.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
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Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Current Percent	Remaining Amount	Remaining Percent
Additional Future Weather Energy Analysis			s.21(1)		\$0.00	0
Recommendations Report Revisions					\$0.00	0
Total	\$9,400.00	\$7,600.00	\$1,800.00		\$0.00	

Invoice Subtotal	\$1,800.00
GST	\$90.00
Invoice Total	\$1,890.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
 Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Current Percent	Remaining Amount	Remaining Percent
Guideline and Recommendation Update			s.21(1)			10
Total	\$7,400.00	\$0.00	\$6,660.00		\$740.00	

Invoice Subtotal	\$6,660.00
GST	\$333.00
Invoice Total	\$6,993.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
 Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						0
Review & Summarize						0
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						0
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						0
Preliminary Guidelines & Report						0
Subtotal						
Workshop 2						
Preparation						0
Host						0
Subtotal						
Project Wrap Up						
Finalize Report						100
Finalize Guidelines						100
Wrap Up Meeting						100
Subtotal						

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Total	\$68,600.00	\$52,325.00	\$4,175.00	\$12,100.00
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Invoice Subtotal	\$4,175.00
GST	\$208.75
Invoice Total	\$4,383.75

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li
 Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						0
Wrap Up						0
Subtotal						
Online Survey						
Prepare & Release						0
Review & Summarize						0
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						0
Group 1 - Analysis & Draft						0
Group 2 - Analysis & Draft						0
Group 3 - Analysis & Draft						0
Energy Model Testing						0
Preliminary Guidelines & Report						0
Subtotal						
Workshop 2						
Preparation						0
Host						0
Subtotal						
Project Wrap Up						
Finalize Report						0
Finalize Guidelines						0
Wrap Up Meeting						100
Subtotal						

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Total	\$68,600.00	\$65,775.00	\$1,025.00	\$1,800.00
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Invoice Subtotal	\$1,025.00
GST	\$51.25
Invoice Total	\$1,076.25

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*

Invoice For:

City of Vancouver
 Charling Li

Attn: Charling Li
 charling.li@vancouver.ca

Focal Engineering Inc.
 467 John St
 Victoria, BC V8T 5H1
 250.516.6088 | 250.318.3596

Project: **23009 CoV EMG Update PO No. 4500623221**

Description	Contract Amount	Prior Billed	Current Billed	Current Percent	Remaining Amount	Remaining Percent
Additional Future Weather Energy Analysis			s.21(1)			0
Recommendations Report Revisions						100
Total	\$9,400.00	\$3,800.00	\$3,800.00		\$1,800.00	

Invoice Subtotal	\$3,800.00
GST	\$190.00
Invoice Total	\$3,990.00

Aging Summary

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
1160	07/31/2024	3,990.00	3,990.00				
	Total	3,990.00	3,990.00	0.00	0.00	0.00	0.00

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top. Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Invoice For:
City of Vancouver

Charling Li

Attn: Charling Li

charling.li@vancouver.ca

Focal Engineering Inc.

467 John St

Victoria, BC V8T 5H1

250.516.6088 | 250.318.3596

 Project: **23009 CoV EMG Update** PO No. 4500623221

Description	Contract Amount	Prior Billed	Current Billed	Percent Complete	Remaining Amount	Remaining Percent
Project Kickoff						
KO Meeting	s.21(1)					0
Project Preparation/ Framework						0
Subtotal						
Workshop 1						
Preparation						0
Host						100
Wrap Up						100
Subtotal						
Draft Guideline Updates						
Meetings - Progress Updates (6)						100
Group 1 - Analysis & Draft						100
Group 2 - Analysis & Draft						100
Group 3 - Analysis & Draft						100
Energy Model Testing						100
Preliminary Guidelines & Report						100
Subtotal						
Workshop 2						
Preparation						100
Host						100
Subtotal						
Online Survey						
Prepare & Release						100
Review & Summarize						100
Subtotal						
Project Wrap Up						
						100
Total	\$68,600.00	\$0.00	\$6,600.00		\$62,000.00	

Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.

Invoice Subtotal	\$6,600.00
GST	\$330.00
Invoice Total	\$6,930.00

*Preferred methods of payment include AFT/ EFT direct deposit, e-transfer or cheque mailed to the address at the top.
Wire transfer fees are the responsibility of the client. Please contact us at accounts@focaleng.com for more details.*



REQUEST FOR PROPOSALS

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

RFP No. PS20230002

Issue Date: January 17, 2023

Issued by: City of Vancouver (the "City")

SUMMARY

The intent of this RFP is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025

PART A INSTRUCTIONS AND INFORMATION

1.0 INSTRUCTIONS

1.1 The City is interested in selecting an entity (each, a “**Proponent**”) that submits a proposal (each, a “**Proposal**”) with the capability and experience to efficiently and cost-effectively meet the requirements described in this RFP. The City expects to select a Proponent to enter into contract negotiations. The term of any agreement is expected to be approximately Six months with possible extensions to complete the work.

However, the City may: (i) decline to select any Proponent; (ii) decline to enter into any agreement; (iii) select multiple Proponents for negotiation; or (iv) enter into one or more agreements respecting the subject matter of the RFP with one or more Proponents or other entities at any time. The City may also terminate the RFP at any time.

1.2 Proponents should submit their proposals on or before 3:00pm on the 6th day of February, 2023 (the “**Closing Time**”) by email in accordance with the following:

- Subject of the file to be: PS# - Title - Vendor name.
- Document format for submissions:
 - RFP Appendix 1 in PDF format - 1 combined PDF file,
 - Any other attachments if necessary
- Zip the files to reduce the size or email separately if needed.
- Send your submissions to dino.goundouvas@vancouver.ca; do not deliver a physical copy to the City of Vancouver.
- Submitting the files via Drop box, FTP, or similar programs, is not acceptable.
- Inquiries related to this RFP must be sent to dino.goundouvas@vancouver.ca by 12pm, February 1, 2023
- Due to cybersecurity concerns, the City of Vancouver will quarantine any inbound email with attachments not in PDF or Microsoft Office formats which will result in non-delivery to Supply Chain Management and will be deemed not submitted. Non-compliant file formats will be detected and quarantined even if they are compressed, zipped, renamed, and include password protected zipped files.
- The maximum number of attachments allowed in an email message is 10 attachments.
- The maximum size limit for an email message, including all attachments, is 10MB per message.

- 1.3 To be considered by the City, a Proposal must be submitted in the form set out in Appendix 1 (the "Proposal Form"), completed and duly executed by the relevant Proponent.
- 1.4 Amendments to a Proposal may be submitted via the same methods, at any time prior to the Closing Time. Proposals are revocable and may be withdrawn at any time before or after the Closing Time.
- 1.5 Proposals that are submitted after the Closing Time or that otherwise do not comply in full with the terms hereof may or may not be considered by the City and may or may not be returned to the Proponent, in the City's sole discretion.
- 1.6 All enquiries must be made in writing and are to be directed only to the above contact person. In-person or telephone enquiries are not permitted. Any communication from potential Proponents to City staff other than the contact person regarding the content of this RFP may lead to disqualification of the Proponent from this RFP process, at the City's sole discretion.

2.0 THIS SECTION HAS BEEN INTENTIONALLY DELETED

3.0 EVALUATION OF PROPOSALS

- 3.1 The City currently intends that all Proposals submitted to it in accordance with the RFP will be evaluated by City representatives, using quantitative and qualitative tools and assessments, as appropriate, to determine which Proposal or Proposals offer the overall best value to the City. In so doing, the City expects to examine:

Evaluation Criteria	Evaluation Weighting
Technical	65%
Financial	30%
Sustainability (Environmental and/or Social)	5%
Total	100%

4.0 CITY'S DISCRETION

- 4.1 For the avoidance of doubt, notwithstanding any other provision in the RFP, the City has in its sole discretion, the unfettered right to: (a) accept any Proposal; (b) reject any Proposal; (c) reject all Proposals; (d) accept a Proposal which is not the lowest-price proposal; (e) accept a Proposal that deviates from the Scope of Work or the conditions specified in the RFP; (f) reject a Proposal even if it is the only Proposal received by the City; (g) accept all or any part of a Proposal; (h) split the Scope of Work between one or more Proponents; and (i) enter into one or more agreements respecting the subject matter of the RFP with any entity or entities at any time. Without limiting the foregoing, the City may reject any Proposal by a Proponent that has a conflict of interest, has engaged in collusion with another Proponent or has otherwise attempted to influence the outcome of the RFP other than through the submission of its Proposal.

5.0 LEGAL TERMS AND CONDITIONS

- 5.1 The legal obligations of a Proponent that will arise upon the submission of its Proposal are stated in Appendix 2. Except where expressly stated in these Legal Terms and Conditions:

(i) no part of the RFP consists of an offer by the City to enter into any contractual relationship; and (ii) no part of the RFP is legally binding on the City. EXCEPT WHERE EXPRESSLY STATED OTHERWISE IN APPENDIX 2: (I) NO PART OF THE RFP CONSISTS OF AN OFFER BY THE CITY TO ENTER INTO ANY CONTRACTUAL RELATIONSHIP; AND (II) NO PART OF THE RFP IS LEGALLY BINDING ON THE CITY.

POTENTIAL PROPONENTS MUST REVIEW THESE LEGAL TERMS AND CONDITIONS CAREFULLY BEFORE SUBMITTING A PROPOSAL.

PART B SCOPE OF WORK

The scope of work stated in this Part B (collectively, the “Scope of Work”) IS current as of the date hereof, but may change or be refined in the course of the evaluation of Proposals or otherwise.

2023 Energy Modelling Guidelines Update

Request for Proposals: Scope of Work

Schedule

The anticipated delivery date of draft results is: Monday, May 15th, 2023

The anticipated dates of 2 proposed workshops are: Week of June 5th, 2023

The anticipated delivery date of final results is: Monday July 10th, 2023

Background

The Zero Emissions Building Plan (ZEBP¹) seeks to reduce the operational emissions of new construction in Vancouver to zero by 2030. Changes to the Vancouver Building By-law (VBBL) were approved in May 2022 to reduce greenhouse gas intensity (GHGI) targets consistent with zero emissions heating and hot water equipment for Part 3 new construction, as well as more stringent targets on climate resilience. The City of Vancouver’s Energy Modelling Guidelines (EMGs) version 2.0 needs to be updated to consolidate feedback and new knowledge that has emerged since the release of version 2.0 in July 2018.

The EMGs are used by projects to demonstrate compliance to the energy and emissions limits in the Vancouver Building By-law and is also referenced by the BC Building Code in the application of the Energy Step Code (ESC) for Part 3 buildings. While the focus of the update will be to reflect Vancouver’s context, proponents are encouraged to consider the implications of these updates to users of the provincial ESC and lead discussions on these implications at the stakeholder workshops (see Deliverables).

Intent

The intent of this scope of work is to update the City of Vancouver’s Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025².

Scope

Throughout the delivery of this scope of work, the proponent should consider applicability or constraints of the common energy modelling software used by modelling professionals in BC for Part 3 large new buildings. Proposed modelling methodologies should work for these modelling software; otherwise provide a recommendation on whether specific software should no longer be used for the purposes of compliance modelling for VBBL or ESC.

¹<https://vancouver.ca/files/cov/zero-emissions-building-plan.pdf>

² <https://council.vancouver.ca/20220517/documents/R1a.pdf#page=34>

It is up to the proponent to propose the necessary methodology to arrive at and justify each recommended change to the EMGs based on the scope items outlined below. Some recommendations may be based on professional judgment and experience of the proponent, while others may require some energy modelling effort to arrive at the recommended approach.

This scope of work is not intended to be an extensive modelling exercise. The energy modelling scope item 14) is meant to provide an overall summary to understand the impact to energy and emissions metrics based on by major impacts such as updated weather files, changes in DHW assumptions, and ventilation standards, etc. Proponents are expected to have access to recent and relevant completed energy models of Part 3 new buildings of different sizes to draw from for the purposes to arriving at the recommendations.

The scope of work consists of the following needs:

1) Weather files

- a) Recommend a change to the standard weather file for demonstrating compliance to VBBL from CWEC 2016 to CWEC 2020 or to another weather file. The intent is to reflect best currently available information to demonstrate compliance to VBBL energy & emissions limits at the time of design.
- b) Recommend standard weather file(s) for completing sensitivity analysis under future climate conditions (e.g. specify climate files with time-scale and Representative Concentration Pathway, or source of climate files, etc.) or the use of Reference Summer Weather Years³. See also Section 5).

2) Domestic hot water

- a) Provide recommendations on whether to include the following changes as per the recommendations of the report “Calibrating the Zero Emissions Building Plan and BC Energy Step Code”⁴
 - increasing peak load assumption to 0.0021L/s/person (Section 3.1.4.1 of the report)
 - adopting a seasonal multiplier to DHW use (Section 3.1.4.2)
 - adopting a recirculation DHW heat loss factor (Section 3.1.4.3)
 - adopting a multiplier for non-submetered DHW (Section 3.1.4.5)
- b) Suggest any other recommendations to improve modelling of domestic hot water use, if any.

3) Ventilation Standard

Provide advice on the implications of the changes to TEDI, TEUI, GHGI and CEDI using ventilation rates in ASHRAE 62.1 -2016 Ventilation and Acceptable Indoor Air Quality as opposed to current VBBL referenced ASHRAE 62.1-2001 for ventilation.

4) Overheating analysis for Passive Cooled Buildings

³ <https://nrc-publications.canada.ca/eng/view/object/?id=abcd0186-37f3-4051-b752-688f04b7063c>

⁴ Crosby, S. 2019. “Calibrating the Zero Emissions Building Plan and BC Energy Step Code” Report for the Greenest City Scholars Program. https://www.researchgate.net/profile/Sarah-Crosby-2/publication/336654063_Calibrating_the_Zero_Emissions_Building_Plan_and_BC_Energy_Step_Code/links/5e583818a6fdccbeba079aa4/Calibrating-the-Zero-Emissions-Building-Plan-and-BC-Energy-Step-Code.pdf

Recommend standardized assumptions for estimating the number of overheating hours for passively cooled buildings (section 4 of the EMGs) for the purposes of demonstrating compliance with overheating limits within VBBL and ESC. The proposed methodology or assumptions should apply to common natural ventilation and other passive cooling strategies and be simple to apply across different project designs and conditions. Include guidance on the following:

- a) Modelling natural ventilation and shading – for example, how window/patio door opening areas are calculated, how much airflow through openings, schedules of operation, external or internal operable shading.
- b) Occupant assumptions such as clothing, metabolic rate, local airspeed, etc.
- c) Other modelling assumptions such as thermal massing
- d) Recommend whether to require the calculation of operative temperature instead of dry bulb temperature in thermal comfort/overheating analysis based on ASHRAE 55 Section 5.3. Include any technical or software constraints associated with this recommendation.
- e) Recommend changes to the values in Table 4 “Acceptability Limits for Naturally Conditions Spaces in Vancouver” in Section 4 of the EMGs to a standard minimum value across all month, with the intent to accommodate projects outside of Vancouver conducting overheating hours analysis for ESC compliance.

5) Resilience to future climate and shock events

- a) For buildings with partial cooling or no active cooling: recommend a methodology for sensitivity analysis of how the number of overheating hours will shift in the future, such as time period to be modelled, the weather files to be used, etc.
- b) For buildings with active cooling: recommend a methodology for sensitivity analysis of overheating hours in the event of a power outage. Suggest a scenario and set parameters for analysis such as the duration of the power outage, the time period to be modelled, the weather files to be used, the number of overheating hours above a thermal safety threshold temperature, etc. Suggest an approach to encourage design teams to explore additional ways to reduce overheating hours during a power outage with the intent to improve the passive survivability of the building.
- c) Recommend a standard methodology and weather files to be used to analyze and report on how peak cooling and heating loads, TEDI, TEUI, GHGI and CEDI change between current and future climate scenarios. Include recommendations on how this information may be presented in the Energy & Emissions Design Report.

6) Cooling Energy Demand Intensity

Establish a standard methodology for calculating cooling energy demand intensity applicable to all building designs including those with full, partial or no mechanical cooling systems.

7) Refrigerant impact – GHGI-R

Projects will be required to account for the greenhouse gas impacts of refrigerants (GHGI-R) in the whole-building GHGI limit as of January 2025. Draft a new guidance section in the EMGs on GHGI-R that includes the following:

- a) Provide recommendation on incorporating GHGI-R estimates in early design for whole building GHGI compliance, based on existing available resources⁵. Reference existing GHGI-R calculation methodology from the Green Buildings Policy for Rezoning – Process and Requirements (amended June 14, 2019)⁶ to the EMGs and recommend updates to the methodology as necessary.
- b) Recommend whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume of refrigerant (nominally 225g)⁷ or a specific cooling capacity (19kW)⁸, or align with any other relevant standards or regulations.
- c) Update the definition of GHGI to include refrigerant impact.

8) Compliance for actively cooled buildings

As of January 2025, dwelling units within Part 3 buildings will be required to have active mechanical cooling capable to maintaining an indoor air temperature of 26°C with windows closed. Provide a recommendation on how compliance may be demonstrated through energy modelling. For example, the weather files and/or peak design condition to be used, the time period to be modelled, any mechanical system details or other compliance information or metrics to be provided by the design and modelling team, etc. Provide insight on any changes to the design and modelling teams' workflow that may be required to demonstrate compliance.

9) Form Factor for slim buildings' TEDI targets

Propose an adjustment factor for small and/or narrow buildings where TEDI targets may be difficult to achieve due to its form factor.

10) Energy efficiency recommendations

Provide technical and policy recommendation on the following items with the intent to further encourage selection of more energy efficient options:

- a. Appliances: should the current credit for EnergyStar appliances for TEUI continue, or should the default modelling assumptions for these appliances be adjusted to Energy Star requirements?
- b. Lighting – is an update to modelling assumptions for lighting necessary and are there other mechanisms to drive better more energy efficient lighting design
- c. Elevators – propose a revision to the current assumption on elevator load or an alternative modelling method to encourage the selection of more efficient elevators
- d. Laundry appliances – does the current assumptions on modelling in-suite laundry require updating?

11) Miscellaneous recommendations

Provide technical and policy recommendations on the following items. Some questions are provided as a starting point for consideration; the proponent is encouraged to provide additional perspectives as they see fit.

- a) Clarify the application of the corridor pressurization adjustment for buildings using energy/heat recovery ventilation systems for corridor supply and return air

⁵ <https://vancouver.ca/files/cov/refrigerant-impact-ghgi-study.pdf>

⁶ <https://vancouver.ca/files/cov/bulletin-green-buildings-policy-for-rezoning-2019-june14.pdf>

⁷ Based on LEED v4 Credit Enhanced Refrigerant Management

⁸ Based on Zero Carbon Buildings v3

- b) The reduction of maximum corridor pressurization adjustment value for TEDI and TEUI to 5
 - c) The removal of the corridor pressurization adjustment for GHGI
 - d) What space uses/types should be included within the building's Modelled Floor Area and Gross Floor Area (e.g. below grade storage or bike storage), and justifications based on anticipate impact on TEDI, TEUI, GHGI, CEDI metrics, etc.
 - e) Recommend changes to the current sub-metering adjustment for hot water for space heating (see 2.7 of the EMGs), if any. Consider whether the adjustment should be removed for simplicity and/or practicality, or if the adjustment should be expanded to include TEDI and DHW heating.
 - f) Recommend whether any further clarifications are needed on the role of the energy modelling professional making reference to the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services⁹
- 12) GHG reduction target methodology for Groups A, B, and F major occupancies
Draft guidance language on the modelling steps for Groups A, B and F major occupancies with GHG reduction targets in VBBL to determine the GHG reduction target based on an all fossil-fuel baseline modelled as per ASHRAE or NECB requirements. If different modelling steps are required for ASHRAE or NECB projects or for different modelling software, provide guidance for different cases.
- 13) Review CSA Z5020 Building Energy Modelling Standard
Provide a high-level review of the soon-to-be published *CSA Z5020 Building Energy Modelling Standard* to identify any significant differences to technical modelling procedures or assumptions compared to the EMGs; provide recommendations on changes to EMGs if necessary.
- 14) Energy Modelling & Report
- a) Apply at least two archetype buildings (at least one 6-storey residential, one 7+ storey residential, etc.) that include typical buildings systems meeting current VBBL requirements, modelled under the methodologies and assumptions outlined in v2.0 of the EMGs and compare the modelled results with the major recommendations from the above list. Provide comparison of how TEDI, TEUI, CEDI, GHGI and overheating hours are affected by the recommended changes. In responding to this RFP, the proponent should specify the methodology for this step.
 - b) Provide a brief report on how various components of building energy usage may be affected by the changes listed above, along with the proponent's list of recommended changes. The report should also provide brief commentary on any significant changes to energy modelling or design workflow related to the recommended changes.
- 15) Engagement with stakeholders
Organize and facilitate a minimum of 2 (two) virtual workshops to share proposed changes to the following groups and gather feedback in June 2023. Create an online survey to collect

⁹<https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW7JPMODAJKVYBCLHGRA24FJJPH3/Whole%20Building%20Energy%20Modelling%20Services>

written feedback to a draft version of the EMG changes. The survey should be made live in time for the workshops and remain open for 4 weeks.

- a) Workshop #1 with stakeholders to include relevant code compliance professionals from BC's Climate Action Secretariat, Building & Safety Standards Branch, BC Housing, BC Hydro, local municipalities etc., with approximate 10-20 individuals
- b) Workshop #2 with local energy modelling professionals (approximately 25-50 individuals)

Deliverables

The project will result in the following deliverables to the City:

- 1) Meetings with City staff as appropriate, including at a minimum:
 - a. Kick-off meeting to review scope and clarify assumptions;
 - b. Regular progress updates, bi-weekly as needed;
 - c. Presentation and review of preliminary findings with core City staff;
 - d. Organize and facilitate two workshops to share proposed changes to industry stakeholders, and to gather input on practical, technical or software issues and opportunities
 - e. Online survey to gather feedback from draft EMG changes
- 2) A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved;
- 3) A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI; and
- 4) A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.

**APPENDIX 1
PROPOSAL FORM**

**RFP No. PS20230002, CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE (the
"RFP")**

Proponent's Name: _____
"Proponent"

Address: _____

Jurisdiction of Legal Organization: _____

Date of Legal Organization: _____

Key Contact Person: _____

Telephone: _____

E-mail: _____

The Proponent, having carefully examined and read the RFP, including all amendments thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 2 to the RFP.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Executive Summary

Provide a brief executive summary of your Proposal.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

References	
Client Name # 1	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	
Client Name # 2	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	
Client Name # 3	
Address (City and Country)	
Contact Name	

Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

Subcontractors

List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).

Declaration of Supplier Code of Conduct

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") <<https://policy.vancouver.ca/AF01401P1.pdf>>, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.

As an authorized signatory of _____ (*vendor name*), I declare that I have reviewed the SCC and to the best of my knowledge, _____ (*vendor name*) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of _____ (*vendor name*).

Signature: _____

Name and Title: _____

Exceptions to Declaration:

Conflicts, Collusion, Lobbying

See Article 9 of Appendix 2 for instructions.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:		
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			\$

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
		\$
		\$
		\$
		\$
		\$

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

Majority owned/controlled/ by:	Workforce Diversity:	Social / Environmental Certifications
<input type="checkbox"/> Women <input type="checkbox"/> Indigenous Peoples <input type="checkbox"/> Non-Profit/Charity (Social Enterprise) <input type="checkbox"/> Coop <input type="checkbox"/> Community Contribution Corporation (3C/CCC) <input type="checkbox"/> Ethno-cultural Persons <input type="checkbox"/> People with Disabilities <input type="checkbox"/> LGBTQ+ <input type="checkbox"/> Other: please indicate	% Women % Indigenous Peoples % Ethno-cultural People % People with Disabilities % LGBTQ+ % Other: please indicate	<input type="checkbox"/> BCorp <input type="checkbox"/> BuySocial <input type="checkbox"/> Supplier Diversity Certification <input type="checkbox"/> Fairtrade <input type="checkbox"/> Green Business Certification (ie. LEED, ClimateSmart) <input type="checkbox"/> Other: please indicate

**APPENDIX 2
LEGAL TERMS AND CONDITIONS OF RFP**

1. APPLICATION OF THESE LEGAL TERMS AND CONDITIONS

These legal terms and conditions set out the City's and the Proponent's legal rights and obligations only with respect to the RFP proposal process and any evaluation, selection, negotiation or other related process. In no event will the legal terms and conditions of this Appendix 2 apply to, or have the effect of supplementing, any Contract formed between the City and the Proponent, or otherwise apply as between the Proponent and the City following the signing of any such Contract.

2. DEFINITIONS

In this Appendix 2, the following terms have the following meanings:

- (a) "City" means the City of Vancouver, a municipal corporation continued pursuant to the Vancouver Charter.
- (b) "Contract" means a legal agreement, if any, entered into between the City and the Proponent following and as a result of the Proponent's selection by the City in the City's RFP process.
- (c) "Losses" means, in respect of any matter, all direct or indirect, as well as consequential: claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement whether from a third person or otherwise).
- (d) "Proponent" means the legal entity which has signed the Proposal Form, and "proponent" means any proponent responding to the RFP, excluding or including the Proponent, as the context requires.
- (e) "Proposal" means the package of documents consisting of the Proposal Form (including this Appendix 2), the Proponent's proposal submitted under cover of the Proposal Form, and all schedules, appendices and accompanying documents, and "proposal" means any proposal submitted by any proponent, excluding or including the Proponent, as the context requires.
- (f) "Proposal Form" means Appendix 2 of the RFP, as completed and executed by the Proponent.
- (g) "RFP" means the document issued by the City as Request for Proposals No. PS20230002, as amended from time to time and including all addenda.

3. NO LEGAL OBLIGATION ASSUMED BY THE CITY

Despite any other term of the RFP or the Proposal Form, including this Appendix 2 (except only Sections 7, 8.2 and 10 of this Appendix 2, in each case to the extent applicable), the City assumes no legal duty or obligation to the Proponent or to any proposed subcontractor in respect of the RFP, its subject matter or the Proposal unless and until the City enters into a Contract, which the City may decline to do in the City's sole discretion.

4. NO DUTY OF CARE OR FAIRNESS TO THE PROPONENT

The City is a public body required by law to act in the public interest. In no event, however, does the City owe *to the Proponent or to any of the Proponent's proposed subcontractors* (as opposed to the public) any contract or tort law duty of care, fairness, impartiality or procedural fairness in the RFP process, or any contract or tort law duty to preserve the integrity of the RFP process. The Proponent hereby waives and releases the City from any and all such duties and expressly assumes the risk of all Losses arising from participating in the RFP process on this basis.

5. EVALUATION OF PROPOSALS

5.1 Compliance / Non-Compliance

Any proposal which contains an error, omission or misstatement, which contains qualifying conditions, which does not fully address all of the requirements or expectations of the RFP, or which otherwise fails to conform to the RFP may or may not be rejected by the City at the City's sole discretion. The City may also invite a proponent to adjust its proposal to remedy any such problem, without providing the other proponents an opportunity to amend their proposals.

5.2 Reservation of Complete Control over Process

The City reserves the right to retain complete control over the RFP and proposal processes at all times. Accordingly, the City is not legally obligated to review, consider or evaluate the proposals, or any particular proposal, and need not necessarily review, consider or evaluate the proposals, or any particular proposal, in accordance with the procedures set out in the RFP, and the City reserves the right to continue, interrupt, cease or modify its review, evaluation and negotiation processes in respect of any or all proposals at any time without further explanation or notification to any proponents.

5.3 Discussions/Negotiations

The City may, at any time prior to signing a Contract, discuss or negotiate changes to the scope of the RFP, any proposal or any proposed agreement with any one or more of the proponents without having any duty or obligation to advise the Proponent or to allow the Proponent to vary its Proposal as a result of such discussions or negotiations with other proponents or changes to the RFP or such proposals or proposed agreements, and, without limiting the general scope of Section 6 of this Appendix 2, the City will have no liability to the Proponent as a result of such discussions, negotiations or changes.

5.4 Acceptance or Rejection of Proposals

The City has in its sole discretion, the unfettered right to: accept any proposal; reject any proposal; reject all proposals; accept a proposal which is not the lowest-price proposal; accept a proposal that deviates from the requirements of the RFP or the conditions specified in the RFP; reject a proposal even if it is the only proposal received by the City; accept all or any part of a proposal; enter into agreements respecting the subject matter of the RFP with one or more proponents; or enter into one or more agreements respecting the subject matter of the RFP with any other person at any time.

6. PROTECTION OF CITY AGAINST LAWSUITS

6.1 Release by the Proponent

Except only and to the extent that the City is in breach of Section 8.2 of this Appendix 2, the Proponent now releases the City, its officials, its agents and its employees from all liability for any Losses incurred in connection with the RFP or the Proposal, including any Losses in connection with:

- (a) any alleged (or judicially determined) breach by the City or its officials, agents or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process,
- (c) the Proponent preparing and submitting the Proposal;
- (d) the City accepting or rejecting the Proposal or any other submission; or

- (e) the manner in which the City: reviews, considers, evaluates or negotiates any proposal; addresses or fails to address any proposal or proposals; resolves to enter into a Contract or not enter into a Contract or any similar agreement; or the identity of the proponent(s) or other persons, if any, with whom the City enters any agreement respecting the subject matter of the RFP.

6.2 Indemnity by the Proponent

Except only and to the extent that the City breaches Section 8.2 of this Appendix 2, the Proponent indemnifies and will protect, save and hold harmless the City, its officials, its agents and its employees from and against all Losses, in respect of any claim or threatened claim by the Proponent or any of its proposed subcontractors or agents alleging or pleading:

- (a) any alleged (or judicially determined) breach by the City or its officials or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process, or
- (c) liability on any other basis related to the RFP or the proposal process.

6.3 Limitation of City Liability

In the event that, with respect to anything relating to the RFP or this proposal process (except only and to the extent that the City breaches Section 8.2 of this Appendix 2), the City or its officials, agents or employees are found to have breached (including fundamentally breached) any duty or obligation of any kind to the Proponent or its subcontractors or agents whether at law or in equity or in contract or in tort, or are found liable to the Proponent or its subcontractors or agents on any basis or legal principle of any kind, the City's liability is limited to a maximum of \$100, despite any other term or agreement to the contrary.

7. DISPUTE RESOLUTION

Any dispute relating in any manner to the RFP or the proposal process (except to the extent that the City breaches this Section 7 or Section 8.2 of this Appendix 2, and also excepting any disputes arising between the City and the Proponent under a Contract (or a similar contract between the City and a proponent other than the Proponent)) will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:

- (a) The arbitrator will be selected by the City's Director of Legal Services;
- (b) Section 6 of this Appendix 2 will: (i) bind the City, the Proponent and the arbitrator; and (ii) survive any and all awards made by the arbitrator; and
- (c) The Proponent will bear all costs of the arbitration.

8. PROTECTION AND OWNERSHIP OF INFORMATION

8.1 RFP and Proposal Documents City's Property

- (a) All RFP-related documents provided to the Proponent by the City remain the property of the City and must be returned to the City, or destroyed, upon request by the City.

- (b) The documentation containing the Proposal, once submitted to the City, becomes the property of the City, and the City is under no obligation to return the Proposal to the Proponent.

8.2 Proponent's Submission Confidential

Subject to the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia), other applicable legal requirements, and the City's right to publicly disclose information about or from the Proposal, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the RFP, the City will treat the Proposal (and the City's evaluation of it), in confidence in substantially the same manner as it treats its own confidential material and information.

8.3 All City Information Confidential

- (a) The Proponent will not divulge or disclose to any third parties any non-public documents or information concerning the affairs of the City which have been or are in the future provided or communicated to the Proponent at any time (whether before, during or after the RFP process). Furthermore, the Proponent agrees that it has not and must not use or exploit any such non-public documents or information in any manner, including in submitting its Proposal.
- (b) The Proponent now irrevocably waives all rights it may have by statute, at law or in equity, to obtain any records produced or kept by the City in evaluating its Proposal (and any other submissions) and now agrees that under no circumstances will it make any application to the City or any court for disclosure of any records pertaining to the receipt, evaluation or selection of its Proposal (or any other submissions) including, without limitation, records relating only to the Proponent.

9. NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

9.1 Declaration as to no Conflict of Interest in RFP Process

- (a) The Proponent confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Proponent or of any of its proposed subcontractors, or any other person related to the Proponent's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is: (i) an official or employee of the City; or (ii) related to or has any business or family relationship with an elected official or employee of the City, in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Proposal by the City, and, in each case, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.
- (b) The Proponent confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the RFP obtained during his or her employment or engagement by the City, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.

9.2 Declaration as to No Conflict of Interest Respecting Proposed Supply

The Proponent confirms and warrants that neither the Proponent nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the RFP would create a conflict of interest or the appearance of a conflict of interest between the Proponent's duties to the City and the Proponent's or its subcontractors' duties to such third party, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.

9.3 Declaration as to No Collusion

The Proponent confirms and warrants that:

- (a) the Proponent is not competing within the RFP process with any entity with which it is legally or financially associated or affiliated, and
- (b) the Proponent is not cooperating in any manner in relation to the RFP with any other proponent responding to the RFP,

in each case, except as set out, in all material detail, in the section titled “Conflicts, Collusion, Lobbying” in the Proposal Form.

9.4 Declaration as to Lobbying

The Proponent confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and
- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the RFP or sought, other than through the submission of the Proposal, to influence the outcome of the RFP process,

in each case as set out, in all material detail, in the section titled “Conflicts, Collusion, Lobbying” in the Proposal Form.

10. GENERAL

- (a) All of the terms of this Appendix 2 to this Proposal Form which by their nature require performance or fulfillment following the conclusion of the proposal process will survive the conclusion of such process and will remain legally enforceable by and against the Proponent and the City.
- (b) The legal invalidity or unenforceability of any provision of this Appendix 2 will not affect the validity or enforceability of any other provision of this Appendix 2, which will remain in full force and effect.
- (c) The Proponent now assumes and agrees to bear all costs and expenses incurred by the Proponent in preparing its Proposal and participating in the RFP process.

APPENDIX 3
SAMPLE FORM OF AGREEMENT



PS20230002 - SERVICES CONTRACT

City of Vancouver (the “City”)

AND: <[legal name of other party]> (the “Contractor”)

having the following address:

453 West 12th Avenue

Vancouver, British Columbia, Canada

V5Y 1V4

Tel Number: [phone number of project manager]

Email: [email address of the project manager]

having the following address:

[address of other party]

Tel Number: [phone number]

Email: [email address]

Name of City Project Manager: []

This contract for services is comprised of this cover page, the following parts A, B, C, D and E, the attached Services Contract Terms and Conditions, and any other attachments, schedules, appendices or annexes expressly referred to in the aforementioned parts A, B, C, D and E, and the signature blocks following Part F below. By signing below, the City and the Contractor hereby agree to be bound by the terms of this contract.

PART A - SERVICES:

<  *Insert description.* >

[Note: Describe in detail what the services are, where they will be performed, who will be performing them, etc. Whenever necessary, supplement with a Schedule A further describing the services, as well as any delivery/performance schedule, milestones, etc.]

The Services are further described in Schedule A. <  **Delete if not included.** >

Start date for the Services: <  > (the "Start Date")

The Contractor agrees to complete the Services by: <  >

PART B - FEES AND EXPENSES:

Billing Date(s): See Section 20 of the Services Contract Terms and Conditions

Fees: <📄description>

[Insert description of fees and state which taxes will be charged in addition to the fees and/or which taxes are included in the fees.]

Definitions:

“GST” means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time.

Expenses: [Tick applicable ONE; tick one.]

- Reimbursable by the City but only in accordance with this Contract (see the Services Contract Terms and Conditions); or
- Not reimbursable (included in fees)

“PST” means the provincial sales tax payable and imposed pursuant to the Provincial Sales Tax Act (British Columbia), as amended or replaced from time to time.

Maximum Amount of Fees and Expenses (the “Maximum Amount”):

<📄description>

[Insert description of cap and state which taxes will be charged on top of the cap and/or which taxes are to be included in the cap.]

The fees and expenses are further described in Schedule B.

[Delete if not included.]

PART C: APPROVED SUBCONTRACTORS

<📄> [Provide names or write “None”.]

PART D: INSURANCE

Without limiting any of its obligations or liabilities under this Services Contract, the Contractor will obtain and continuously carry and will cause its subcontractors to obtain and continuously carry during the term of the Services Contract at its own expense and cost, the following insurance coverages with minimum limits of not less than those shown in the respective items set out below:

- (a) Commercial general liability insurance with a limit of not less than \$5,000,000 per occurrence and a deductible of not more than \$5,000 or other such amounts as the City may approve from time to time, protecting the Contractor and the Contractor's personnel against all claims for bodily injury including death, personal injury, advertising liability, products liability, sudden & accidental pollution, completed operations, or property damage or loss, arising out of the operations of the Contractor or the actions of the Contractor or the Contractor's personnel. The policy will carry blanket contractual liability coverage, include a cross-liability clause in favour of the City, and will name the City and the City's officials, officers, employees and agents as additional insureds;
- (b) All-risks property insurance covering the Contractor's property of every description containing a provision in which the insurer waives all rights which it may acquire by payment of a claim to recover the paid amount from the City or its officials, officers, employees or agents; and
- (c) Automobile insurance covering all vehicles owned, leased, rented or operated by the Contractor in connection with this Services Contract, including third party legal liability insurance in an amount not less than \$5,000,000 per occurrence, or such other amount as the City may approve from time to time.

The Contractor and each of its subcontractors will provide at its own cost other lines of insurance coverages, endorsements, or increased limits of insurance as deemed necessary by the City and as a reasonable and prudent contractor would require to protect their operations or performance of services.

All insurance policies required by this Services Contract shall be with insurers duly authorized to carry on business in the Province of British Columbia, in a form and in amounts satisfactory from time to time and acceptable to the City's Director of Risk Management.

The required insurance shall not be cancelled or endorsed to reduce the limits of liability without thirty (30) days' written notice by registered mail to the City. Should the policy be endorsed to restrict coverage midterm, written notice of such restriction will be provided by registered mail to the City no later than the effective date of change; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply. Notice must identify the contract title, number, policy holder, and scope of work.

The Contractor's insurance policy (policies) shall be primary with respect to all claims arising out of the operations of the Contractor. Any insurance or self-insurance maintained by or on behalf of the City or its officials, officers, employees, or agents will be excess of the Contractor's insurance and will not contribute to it.

Neither the providing of insurance by the Contractor in accordance with this Agreement, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing will be held to relieve the Contractor from any other provisions of the Services Contract with respect to liability of the Contractor or otherwise.

Prior to the Start Date, the Contractor will provide the City with evidence of all required insurance in the form of a certificate of insurance satisfactory to the City. The certificate of insurance will identify the contract title, number, policyholder, and scope of work. The Contractor will provide proof of insurance, in the form of a certificate of insurance or certified copies of all insurance policies to the Manager, Contracts and Administration at any time immediately upon request.

The Contractor will provide in its agreements with its subcontractors clauses in the same form as in this Part D. Upon request, the Contractor will deposit with the City detailed certificates of insurance for the policies it has obtained from its subcontractors and a copy of the applicable insurance clauses from its sub-contract agreements.

PART E: ADDITIONAL TERMS

<☒> [Describe or write "None".]

The following are integral parts of this Services Contract:

- <☒name of first schedule>;
- <☒name of second schedule>; and
- <☒name of third schedule>.

[Delete if no attachments.]

The parties hereto have duly executed this Contract as of the <☒> day of <☒month>, 20<☒year>.

SIGNED AND DELIVERED on behalf of the City by its authorized signatory(ies):

SIGNED AND DELIVERED on behalf of the Contractor by its authorized signatory(ies):

Per: _____

[Name and Title]

Per: _____

[Name and Title]

SERVICES CONTRACT TERMS AND CONDITIONS

A. CONTRACTOR'S OBLIGATIONS

1. **Performance of Services.** The Contractor agrees to provide the City with the services described in PART A (and in any schedule referred to therein), including, without limitation, and to the extent not expressly described in PART A (or in any such schedule), all services necessary or incidental to the completion of the services contemplated and described therein (the "Services"), all in accordance with the Services Contract (this "Contract"). The Contractor must provide the Services commencing on the Start Date described in PART A and in accordance with the delivery schedule (if any) specified in PART A (or in any schedule referred to therein), regardless of the date of execution or delivery of this Contract. The Contractor must comply with the City's instructions in performing the Services, but unless otherwise specified herein, the Contractor shall at all times retain control over the manner in which those instructions are carried out.
2. **Provision of Service Inputs.** Unless otherwise specified herein, the Contractor must supply and pay for all labour, materials, permits and approvals (including from any relevant government authority) necessary or advisable to provide the Services.
3. **Standard of Care and Applicable Laws.** The Contractor must perform the Services to the standard of care, skill, and diligence prescribed herein, or where not prescribed herein, to the standard customarily maintained by persons providing, on a commercial basis, services similar to the Services, and in accordance with all statutes, regulations, by-laws, codes, rules, notices, orders, directives, standards and requirements of every competent federal, provincial, regional, municipal and other statutory authority applicable to the Contractor and its personnel and the Services.
4. **Warranty.** Without limitation to any additional warranties provided by the Contractor, whether indicated on the face of this contract or otherwise provided, the Contractor warrants that: (a) all goods, provided by the Contractor in connection with its performance of the Services ("Goods"), shall be of merchantable quality and free from defects in workmanship and materials; (b) all Goods shall strictly conform to applicable samples, specifications and drawings; (c) all Goods and Services shall be fit for the purpose intended by the City; (d) all Goods shall be free and clear of all liens, charges and encumbrances; (e) the Goods and Services shall comply with the standards set forth by applicable federal, provincial, municipal and industry regulatory agencies; (f) the shipping and handling of any hazardous material will be made in accordance with all applicable laws and regulations; and (g) the Goods and Services shall comply with all applicable environmental protection laws and regulations.

Unless a longer warranty period is specified on the face of this Contract or is otherwise provided, the foregoing warranty shall be valid for one year from the date of acceptance of the Goods and Services by the City. If at any time prior to the expiration of any applicable warranty period, any weakness, deficiency, failure, breakdown or deterioration in workmanship or material should appear or be discovered in the Goods and Services furnished by the Contractor, or if the Goods and Services do not conform to the terms and conditions of this Contract, the City may at its option (a) require the Contractor to promptly replace, redesign or correct the defective and non-conforming Goods and Services at no expense to the City, or (b) the City may replace or correct the defective Goods and Services and charge the Contractor with all expenses incurred by the City. The Contractor agrees to indemnify and save harmless the City, its officials, officers, employees, assigns, agents, clients and the public from any liability, loss, cost and expense arising either directly or indirectly, from breach of any warranty given by the Contractor hereunder.

5. **Contractor Personnel.** The Contractor must ensure that all persons it employs or retains to perform the Services are competent to perform them and are properly trained, instructed, and supervised, and that all such persons comply with the provisions of this Contract.
6. **Reporting.** The Contractor must, upon the City's request, fully report to the City on all work it does or has done in connection with providing the Services.
7. **Deliverables.** As a result of or as part of providing the Services, the Contractor may receive, create, produce, acquire or collect items including, without limitation, products, goods, equipment, supplies, models, prototypes and other materials; information and data; reports, drawings, plans, designs, depictions, specifications and other documentation (collectively, "Deliverables"). Deliverables do not include items that are: not required to be produced by the Contractor or supplied to the City as part of or together with the Services unless the City pays for such items; or specified in this Contract as being excluded from the Deliverables category; or items which pre-existed the effective date of this Agreement that are owned by a third party or that are used by the Contractor as part of the services provided to any of its other customers. All Deliverables will be owned solely by the City unless otherwise expressly provided herein and the City will have the complete right to use and deal with the Deliverables for its own benefit in any way it sees fit without limitation. The Contractor waives, in favour of the City, all moral rights in the Deliverables, transfers to the City, free of all liens and encumbrances, ownership of each Deliverable, and assigns all of its world-wide present and future rights, title and interest in and to each Deliverable, including copyright, effective as of the date of creation or acquisition of such Deliverable. The Contractor will permit the City to inspect and copy all Deliverables.
8. **Confidentiality.** The Contractor acknowledges that, in performing the Services required under this Contract, it may acquire information about matters which are confidential to the City, which information is the exclusive world-wide property of the City or its suppliers or citizens, as the case may be. The Contractor undertakes to treat as confidential all Deliverables and all information received by reason of its position as Contractor and agrees not to disclose the same to any third party either during or after the performance of the Services under this Contract, without the City's express prior written consent.
9. **Insurance.** The Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, the insurance coverage (if any) described in PART D (including the type and form of policy, the coverage amounts, and the amount of deductible). If no insurance coverage is specified in PART D, the Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, such insurance as would be obtained by a prudent consultant or contractor providing services similar to the Services. The Contractor must provide written proof of such insurance coverage upon the written request of the City.
10. **WorkSafeBC.** The Contractor agrees that it will procure and carry and pay for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or services performed in fulfilling this Contract have been paid in full. The Contractor will provide the City with the Contractor's and each subcontractor's WorkSafeBC registration number and clearance letters from WorkSafeBC confirming that the contractor and each subcontractor is in good standing with WorkSafeBC prior to the City having any obligation to pay monies under this Agreement.

Whenever the Contractor is required or permitted to perform any Services on any City sites, the Contractor is now appointed and now accepts appointment as the "prime contractor" in connection with such Services and will fulfil its obligations as Prime Contractor in accordance with the Workers Compensation Act (British Columbia), and the regulations thereunder, and the Contractor shall comply with all applicable health and safety laws.

11. **City Business Licence.** The Contractor will maintain a valid City of Vancouver business licence in good standing throughout the duration of this Contract.
12. **Resolution of Disputes.** This Contract will be governed by the laws of British Columbia and the parties now irrevocably attorn to the exclusive jurisdiction of, and agree to submit all disputes to, the courts of British Columbia for resolution. The Contractor shall continue performance of its obligations under this Contract notwithstanding the existence of a dispute.
13. **Independent Contractor.** This Contract is a contract for services and neither the Contractor nor the Contractor's personnel or permitted subcontractors, are, or deemed to be, partners, appointees, employees or agents of the City. The Contractor will not represent to anyone that the Contractor has any authority to bind the City or that the Contractor is an employee or agent of the City.
14. **No Assignment or Subcontracting.** The Contractor will not assign or subcontract (other than to persons listed in PART C (or a schedule referred to therein)), either directly or indirectly (including, without limitation, by way of any transfer of control of the shares or ownership interests in the Contractor), this Contract or any right or obligation of the Contractor under this Contract, without the prior written consent of the City, which consent may be arbitrarily withheld. No assignment or subcontract, whether consented to or not, relieves the Contractor from any obligations under this Contract. The Contractor must ensure that any assignee or subcontractor fully complies with this Contract in performing the Services and nothing in this Contract creates any contractual relationship between a subcontractor and the City.
15. **Conflict of Interest.** The Contractor must not provide any services to any person in circumstances which, in the City's reasonable opinion, could give rise to a conflict of interest between its duties to that person and its duties to the City under this Contract.

16. Release and Indemnification

a. Release

The Contractor now releases the City and the City's personnel from all losses including those caused by personal injury, death, property damage or loss, and economic loss, arising out of, suffered or experienced by the Contractor or the Contractor's personnel in connection with their performance of the Services.

b. Acceptance "As Is"

In undertaking the Services, the Contractor acknowledges that it has inspected the City's site(s), agrees to accept the site(s) "as-is" and undertakes to take all precautions necessary to ensure the safety of all the Contractor's personnel.

c. Indemnity

Despite any insurance which may be placed by the City, the Contractor now agrees to indemnify and save harmless the City and its officials, officers, employees, agents, successors, assigns and authorized representatives (in each case, an "Indemnified Party") from and against all costs, losses, claims, damages, actions and causes of action ("Claims") that an Indemnified Party may sustain, incur, suffer or be put to at any time either before or after the completion of the Services or sooner cancellation of this Contract, that arise out of any act or failure to act of the Contractor or the Contractor's personnel, permitted assignees or subcontractors in connection with the performance of this Contract, including any Claims that arise out of or are in any way related to unpaid WorkSafeBC assessments or the failure to observe safety rules, regulations and practices of WorkSafeBC, excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or negligent acts of an Indemnified Party.

d. Separate from Other Remedies and Rights

Nothing in this Contract (including this indemnity) will affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

e. Survival of Release/Indemnity

This Section 16 will survive the expiry or sooner termination of this Contract.

B. CHANGES TO SERVICES

17. **Changes.** The City may, at any time and from time to time and without invalidating this Contract, require a change to the Services and/or to the schedule for the delivery of the Services. Should the Contractor consider that any such request or instruction constitutes a change warranting amendment of the Maximum Amount, another price or the schedule for the Services set forth in the Contract, the Contractor must advise the City in writing prior to acting on any such request or instruction, and in any event within five (5) City of Vancouver business days of such request or instruction. In that case, the Maximum Amount, other price and/or schedule will be adjusted, if/as agreed to by both parties in writing, and failing agreement, if/as the City may determine, acting reasonably. Failing any such adjustment, the Services provided pursuant to the request or instruction will be deemed to be included within the prices specified herein, and to be subject to the schedule prescribed herein.

18. **Changes to Key Personnel.** The City may from time to time request reasonable changes to the key personnel of the Contractor engaged in performing the Services, and the Contractor shall comply with any such request. The Contractor shall not change any of such key personnel without the prior written approval of the City, which approval will not be unreasonably withheld.

C. PAYMENT

19. **Payment of Fees and Expenses.** In consideration for the satisfactory performance of the Services, The City will pay to the Contractor the fees specified in PART B (as supplemented by any schedule referred to therein), subject to this Section C. In addition, if the parties have specified in PART B that the Contractor's expenses are reimbursable in accordance with this Contract, the City will reimburse the Contractor for all expenses that: (i) are approved by the City in writing (in accordance with the City's existing policies and procedures for expense reimbursement) prior to their being incurred by the Contractor; (ii) are necessary, in the opinion of the City, to perform the Services; and (iii) are supported by proper receipts or other documentation satisfactory to the City (acting reasonably), provided always that the City reserves the right to make arrangements through its service providers for any flights and/or accommodations required by the Contractor in connection with its performance of the Services. If a "Maximum Amount" is specified in Part B, then the City is not, and shall not be, obliged to pay to the Contractor more than such Maximum Amount on account of aggregate fees (and, if applicable, expenses). Payment terms are "net 30 days" from the date of receipt of a valid invoice.

20. **Invoicing.** The Contractor will, by the 25th day of each month, provide to the City's Project Manager (named on the cover page of this Contract) a draft invoice with an attached detailed account of all charges to be claimed by the Contractor for the preceding month. The City's Project Manager shall review the draft, raise any concerns with the Contractor within ten working days and, after settlement of any issues (in the Project Manager's discretion), approve the draft invoice. The Contractor, if so requested, will meet with the City's Project Manager to expedite and settle the draft invoice. The Contractor will submit its final invoice, as per the approved draft invoice, to the City of Vancouver, Attention: Accounts Payable, by email to APInvoice@vancouver.ca. Each invoice must contain:

- Contractor name, address and telephone;
- City purchase order number;
- Name of the City's Project Manager;
- Invoice number and date;
- Details of any applicable taxes; and
- Tax registration number(s).

21. **Builders Lien Act.** If the Services to be performed under this Contract are subject to the holdback requirements set out in the *Builders Lien Act* (British Columbia) (the "Lien Act"), the City will withhold and discharge the required holdback amounts in accordance with the requirements set out in the Lien Act.

22. **Discharge of Liens and Withholding.** The Contractor will, if applicable, make payment and take all other steps which may be necessary so that no lien claims, including lien claims made under the Lien Act, are made in connection with the provision of the Services, and that the compensation payable to the Contractor by the City is not subject to attachment for debt, garnishing process or otherwise. In the event that any lien is filed in connection with the provision of the Services at any court or land title office, the Contractor shall immediately cause such lien to be discharged. The City may withhold from any payment due to the Contractor an amount sufficient to indemnify the City against any lien claim that could arise in connection with the provision of the Services, until such time as the lien has been discharged or other arrangements to satisfy such lien have been made by the Contractor.

23. **Withholding for Non-Residents.** If the Contractor is a non-resident of Canada, the City may withhold from any payment due to the Contractor such amounts as may be required to be withheld pursuant to the applicable provisions of the Canada *Income Tax Act* (the "ITA"). Any amount so withheld shall be remitted to the Receiver General for Canada or otherwise dealt with by the City strictly in accordance with the provisions of the ITA.

24. **Record Keeping.** The Contractor must maintain, and shall cause any subcontractors to maintain, time records and books of account, invoices, receipts, and vouchers of all expenses incurred, in form and content satisfactory to the City. The City or any of its authorized representatives will, for the purposes of audit and examination, have access and be permitted, upon reasonable notice to the Contractor, to inspect such records for review, copy and audit at any time and from time to time while this Contract is in effect and for a period of three years after the expiry or termination of this Contract for any reason.

25. **Currency.** Unless otherwise specified in this Contract, all references to money are to Canadian dollars.

26. **Electronic Funds Transfer.** The City expects to make payments by electronic funds transfer and the Contractor must provide banking information to the City in order to permit this.

D. GENERAL

27. **Time for Performance.** Time is of the essence in this Contract.
28. **Amendments.** No modification of this Contract is effective unless it is in writing and signed by all the parties.
29. **Entire Agreement.** This Contract constitutes the entire agreement between the parties as to performance of the Services, and replaces and supersedes any other agreements, correspondence or other discussions between the parties, whether or not any of the foregoing have been reduced to writing.
30. **Conflict.** If there is a conflict between a provision of a schedule to this Contract and the terms and conditions of this Services Contract, the provision in the relevant schedule is inoperative to the extent of the conflict unless it states that it operates despite a conflicting provision of this Contract.
31. **Severability.** If any provision of this Contract is determined to be void or unenforceable, in whole or in part, it shall not be deemed to affect or impair the enforceability or validity of any other provision of this Contract, and any such void or unenforceable provision may be severed from this Contract without affecting the remainder of the Contract.
32. **Termination.** The City may terminate this Contract:
- a. Upon failure of the Contractor to comply with this Contract, immediately on giving written notice of termination to the Contractor, or
 - b. For any other reason, on giving at least 10 days' written notice of termination to the Contractor.

If the City terminates this Contract under paragraph b. above, the City must pay the Contractor that portion of the fees and expenses described in PART B which equals the portion of the Services that was completed to the City's satisfaction before termination. That payment discharges the City from all liability to the Contractor under this Contract. If the Contractor fails to comply with this Contract, the City may terminate it and pursue other remedies as well.

33. **Binding Effect.** This Contract shall be binding on the Contractor's successors and permitted assigns and shall enure to the benefit of any successors and assigns of the City.
34. **Voluntary Agreement.** The Contractor acknowledges and declares that it has carefully considered and understood the terms of this Contract, that it has either consulted legal counsel or waived such right, and that it is executing this Contract voluntarily.
35. **Further Assurances.** The Contractor agrees that upon any reasonable request of the City, the Contractor will make, do, execute or cause to be made, done or executed all such other acts as may be required to more fully give effect to the terms and conditions hereof.
36. **Headings.** The headings used in the Parts and sections of this Contract are for convenience of reference only, and shall not operate to expand, modify or interpret the language therein.
37. **Counterparts.** This Contract may be executed in one or more counterparts, including by facsimile or other electronic transmission, and each of such counterparts shall be deemed to be taken together to constitute one and the same original document.
38. **Additional Terms:** The additional terms set out in Part E (or in any schedule referred to therein) apply to this Contract. **END OF TERMS AND CONDITIONS OF SERVICES CONTRACT**

[Add schedules.]

Charling Li
City of Vancouver
charling.li@vancouver.ca

May 16, 2024

RE: ADDITIONAL ANALYSIS FOR FUTURE WEATHER FILE ENERGY IMPACTS

Charling,

Based on modelling analysis and public feedback on proposed changes to City of Vancouver Energy Modelling Guidelines Focal has provided a recommendation that the Guidelines use a future weather file for energy analysis from National Research Council (NRC), the "NRC GW1.0" weather file. To better understand the impacts of this change the City of Vancouver has requested analysis for additional buildings be completed.

This fee proposal is for Focal to complete additional energy modelling analysis on **s.21(1)** **s.21(1)** under the current Vancouver **CWEC 2016** weather file and future **NRC GW1.0** weather file and reporting the key **TEUI** and **TEDI** results for each.

Scope and Parameters:

- Complete energy modelling for **10 buildings** under both the Vancouver CWEC 2016 and NRCB GW1.0 weather files and report **TEUI** and **TEDI** results.
- Include *at least* 1 building from the following categories (with some overlapping):
 - Mid-rise MURB, high-rise MURB, market housing, non-market housing, office, mixed-use residential/retail, hotel/motel.

s.21(1)

Deliverables:

- A summary of the analysis including methodology, key inputs, and TEDI and TEUI results per projects in in PDF or Excel format. This will be provided to the City of Vancouver as an internal review document, for comments and discussion prior to incorporating into the Recommendations Report.
- The summary of the analysis and findings will be incorporated into the final revisions to Focal's Recommendations Report prior to public issue, anticipated for Fall 2024.

Fees

Our estimated fees for this scope outlined in the table below, based on the following hourly rates: Senior Energy Modeller **s.21**, Associate **s.21**, and Principal **s.21**. All fees **exclude** applicable taxes.

Scope Item	Base Fee
Additional Future Weather Energy Analysis (10 buildings)	s.21
Recommendations Report Revisions	s.21
Total	\$9,400

All terms and conditions remain the same as in our original contract.

Next Steps

If you wish to proceed with the analysis, please sign the following section and return a copy to the writer. Should you have any questions, do not hesitate to contact us as we would be pleased to discuss this in further detail.

Accepted by

Name _____ Title _____

Signature _____ Date _____

Best regards,

Susan MacDougall, P.Eng., FEC, LEED AP BD+C, CPHC
Principal
P (604) 318-3596 x1 | M (604) 842-7893
susan@focaleng.com

Riley Beise, P.Eng., BEMP
Principal
P (250) 516-6088 x2 | M (250) 661-3817
riley@focaleng.com



CITY OF VANCOUVER
 Focal Engineering Inc.
 467 John Street
 Victoria BC V8T 5H1

Salesperson / Telephone / Fax
 /1 250 5166088/

**CITY OF VANCOUVER
 Purchase Order**

PO number/date
 4500623221 / Mar 07, 2023
 Issuing employee/Telephone
 Dino Goundouvas / 604-871-6812
 Our fax number
 604-873-7057
 Our email address
 dino.goundouvas@vancouver.ca
 Our reference PS20230002

Created by
 s.22(1)

Please bill to:
 City of Vancouver
 Accounts Payable
 PO Box 7757
 Vancouver, BC, V6B 0L5
 Tel/Fax : 604-673-8355, 604-673-8356
 Remit to: APInvoice@vancouver.ca
 Inquiry : APCentral@vancouver.ca

Please deliver to:
 Attention: Jaclyn Jimenez
 City of Vancouver
 510 West Broadway- 3rd Floor
 Vancouver BC V5Z 1E9

Delivery date Mar 07, 2023

Payment terms : Net 30 days

Currency CAD

Energy Modelling Guidelines Update 2023
 Per RFP PS20230002
 City Contact - Charling Li
 May 28/24 CO 1 \$68,700.00 + \$9,400.00 = \$78,100.00
 Nov 18/24 CO 2 \$78,100.00 + \$7,400.00 = \$85,500.00

Item	Material # Order qty.	U/M	Description	Unit price	Delivery Date Ext. price	Tx
00010	1.000	Perf. unit	Energy Modelling Guidelines Update 2023	s.21(1)	Mar 07, 2023 s.21(1)	IG

*** Item partially delivered ***
 Expected value of unplanned services: s.21(1)

Total net item value excluding tax	s.21(1)
HST	0.00
Parking Tax	0.00
GST	s.21(1)
PST	0.00
Total Including tax	89,775.00

Tax code legend: IB - GST&PST Applied
 IG - GST Applied

Item	Material #	Description	Unit price	Delivery Date	Tx
	Order qty.	U/M		Ext. price	
		IM - GST Applied, PST Self-Assessed			
		IN - Non-Taxable			
		SB - GST&PST Applicable Self-Assessed			
		SG - GST Applicable Self-Assessed			



CITY OF
VANCOUVER
Focal Engineering Inc.
467 John Street
Victoria BC V8T 5H1

Salesperson / Telephone / Fax
/1 250 5166088/

Please bill to:
City of Vancouver
Accounts Payable
PO Box 7757
Vancouver, BC, V6B 0L5
Tel/Fax : 604-673-8355, 604-673-8356
Remit to: APInvoice@vancouver.ca
Inquiry : APCentral@vancouver.ca

**CITY OF VANCOUVER
Purchase Order**

PO number/date
4500623221 / Mar 07, 2023
Issuing employee/Telephone
Dino Goundouvas / 604-871-6812
Our fax number
604-873-7057
Our email address
dino.goundouvas@vancouver.ca
Our reference PS20230002

Please deliver to:
Attention: Jaclyn Jimenez
City of Vancouver
510 West Broadway- 3rd Floor
Vancouver BC V5Z 1E9

Delivery date Mar 07, 2023

Payment terms : Net 30 days

Currency CAD

Energy Modelling Guidelines Update 2023
Per RFP PS20230002
City Contact - Charling Li
May 28/24 CO s.21(1)

Item	Material # Order qty.	U/M	Description	Unit price	Delivery Date Ext. price	Tx
00010	1.000	Perf. unit	Energy Modelling Guidelines Update 2023	s.21(1)	Mar 07, 2023 s.21(1)	IG

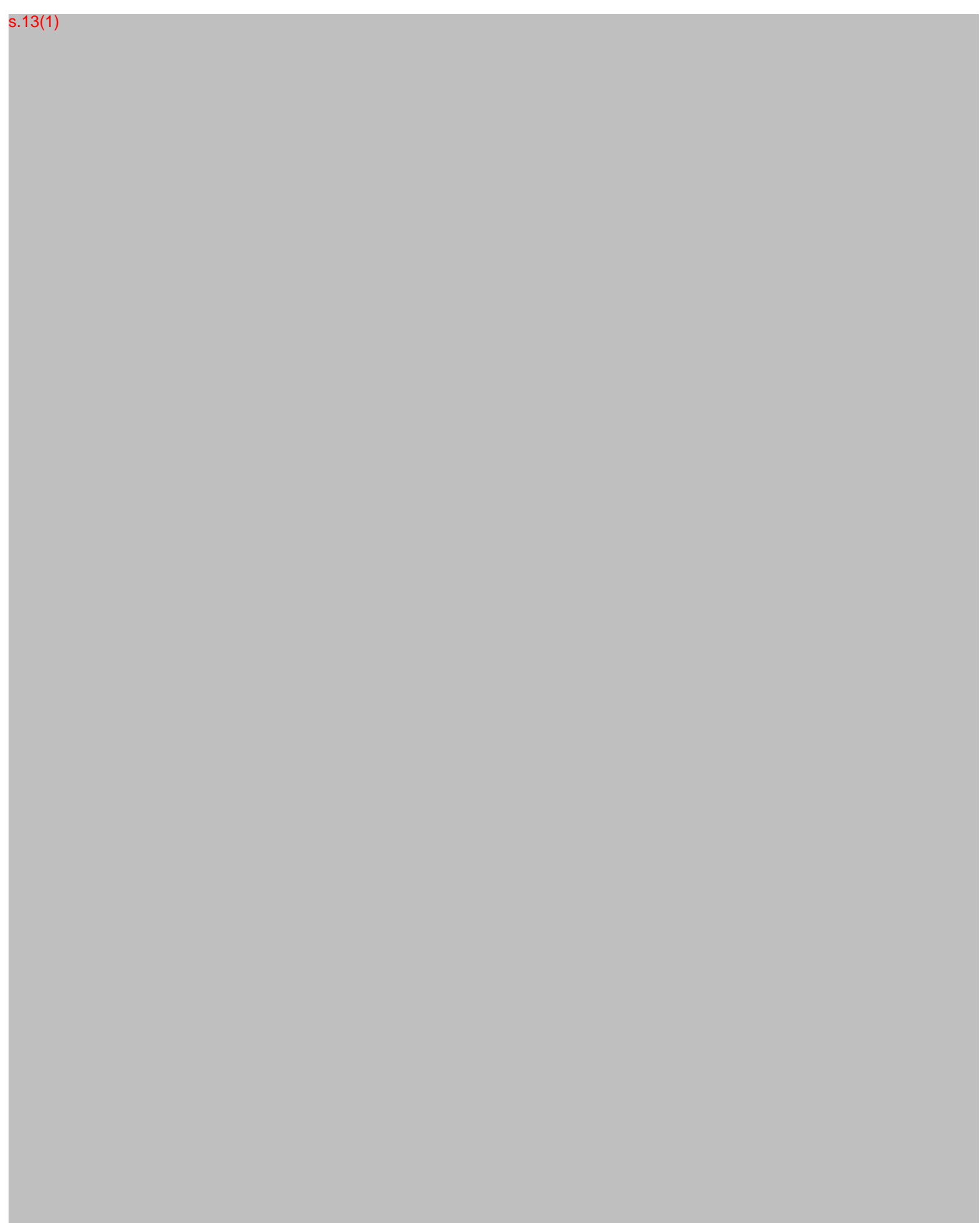
*** Item partially delivered ***
Expected value of unplanned services: s.21(1)

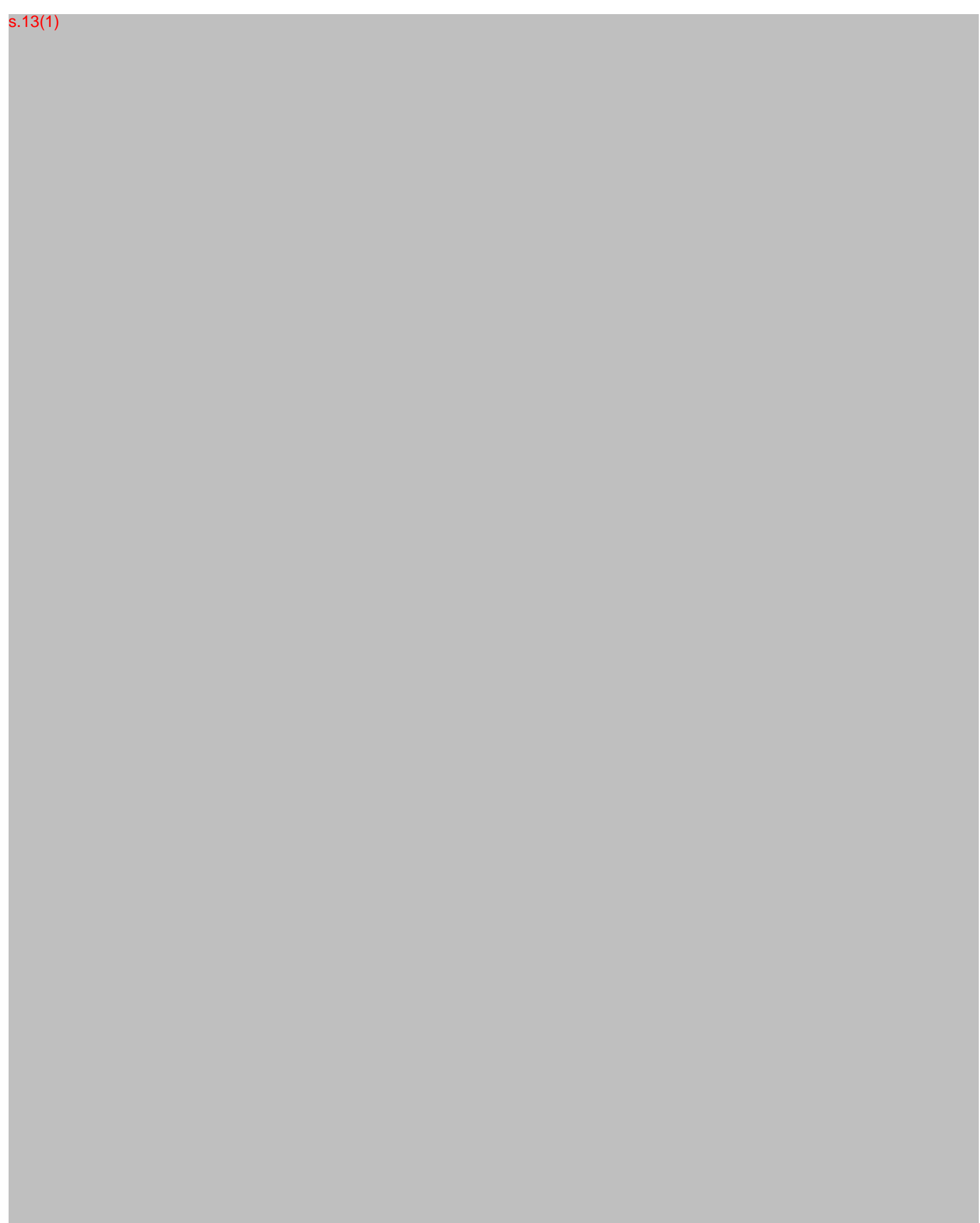
Total net item value excluding tax	s.21(1)
HST	0.00
Parking Tax	0.00
GST	s.21(1)
PST	0.00
Total Including tax	82,005.00

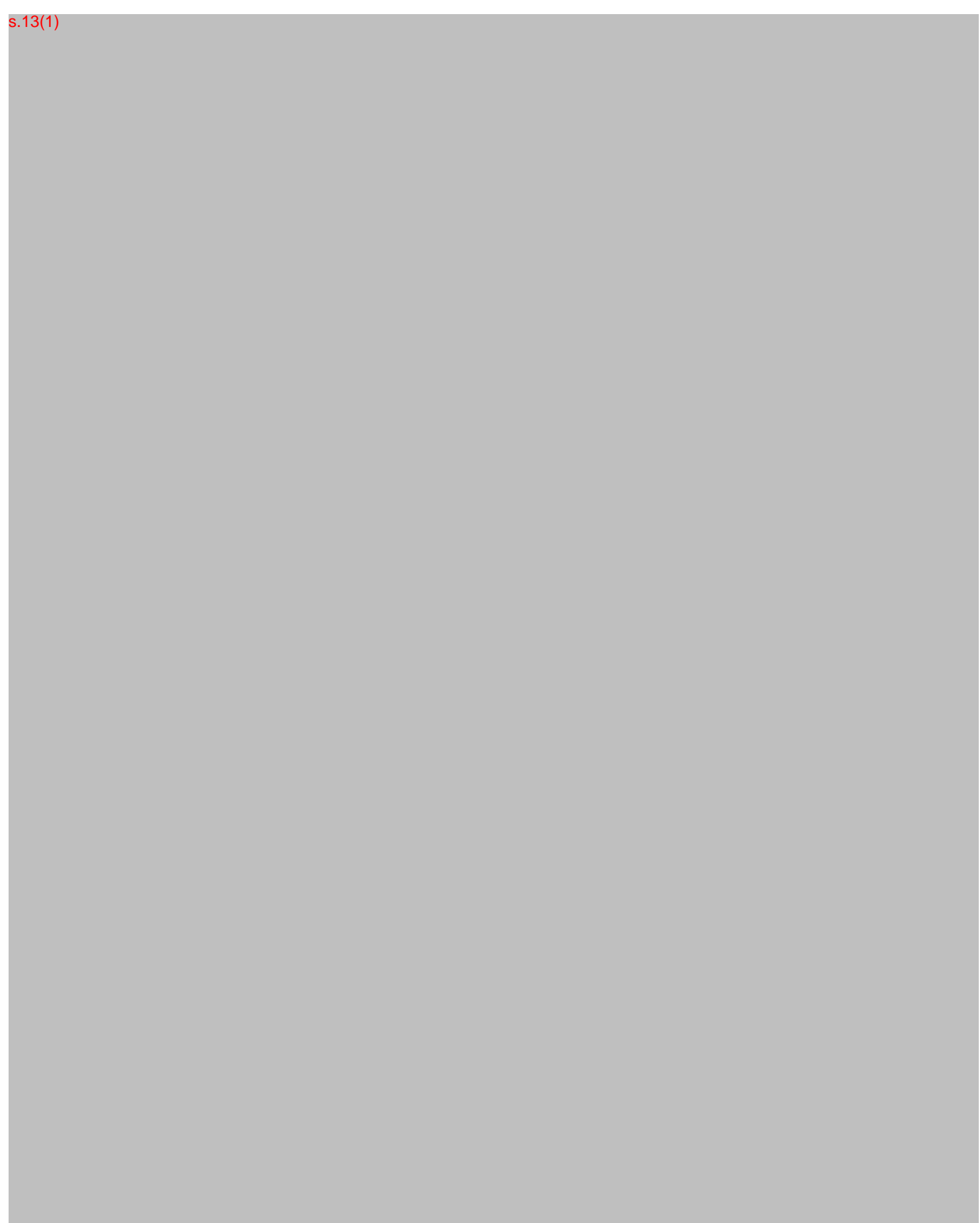
Tax code legend: IB - GST&PST Applied
IG - GST Applied
IM - GST Applied, PST Self-Assessed

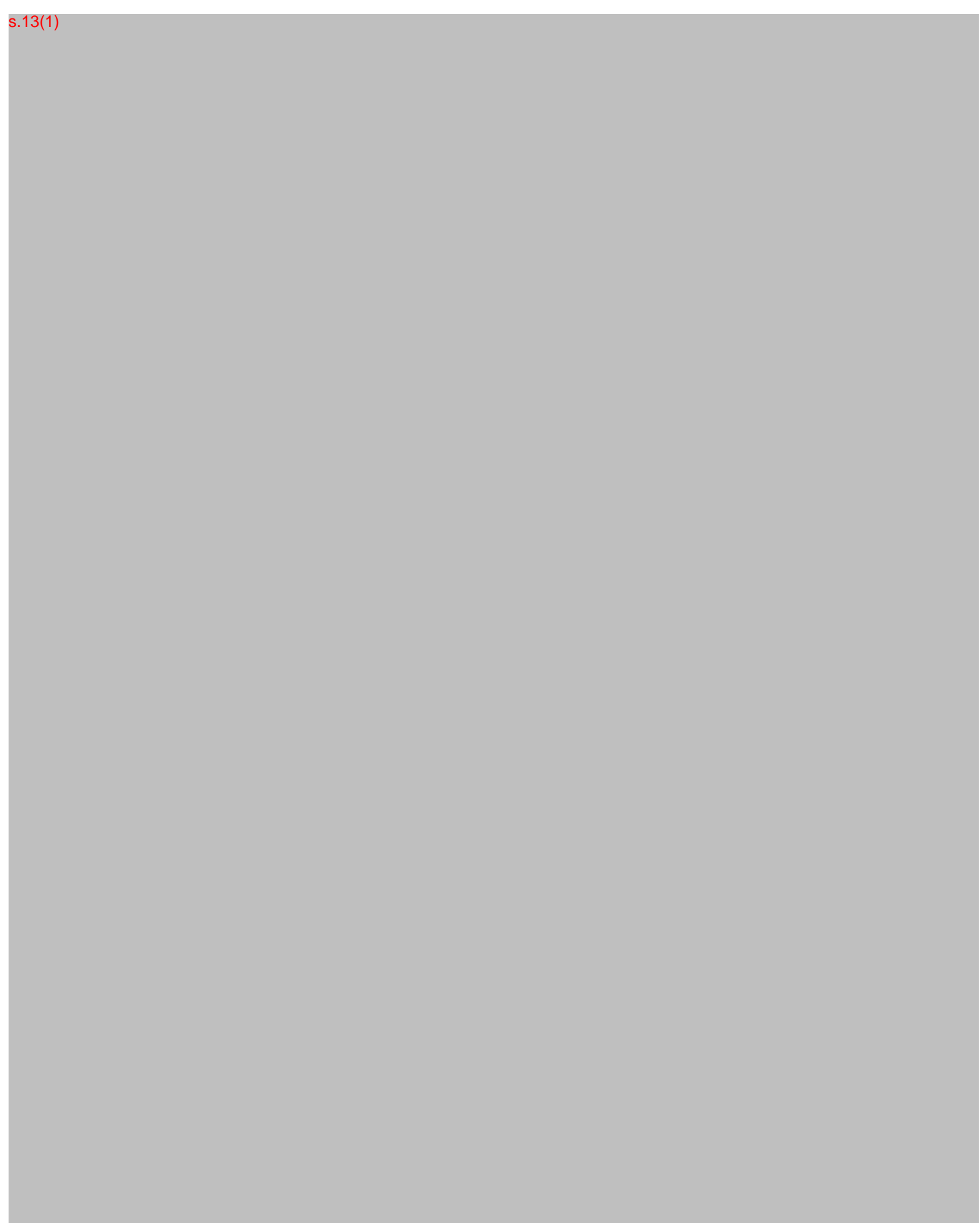
Item	Material #	Description	Unit price	Delivery Date	Tx
	Order qty.	U/M		Ext. price	

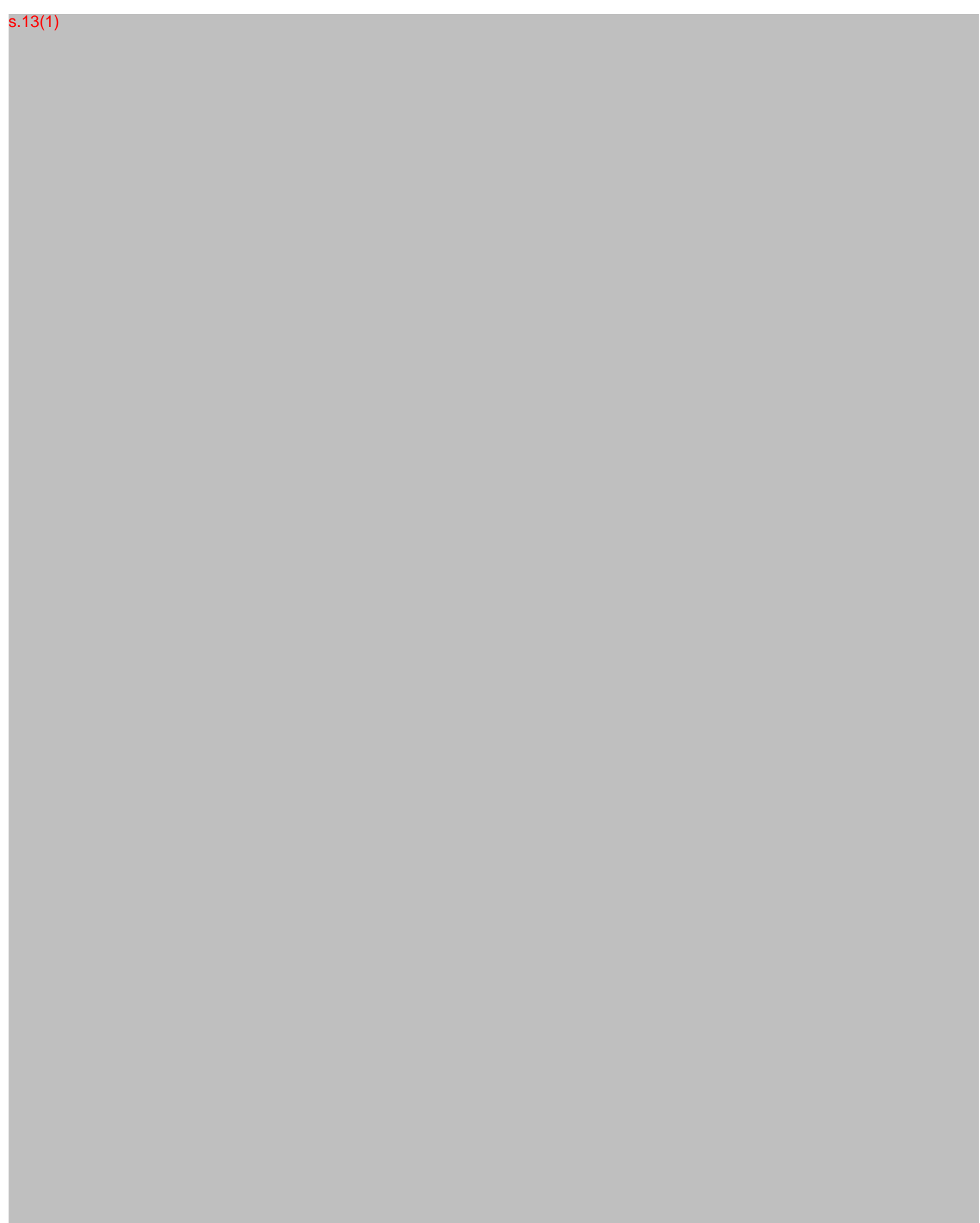
IN - Non-Taxable
SB - GST&PST Applicable Self-Assessed
SG - GST Applicable Self-Assessed

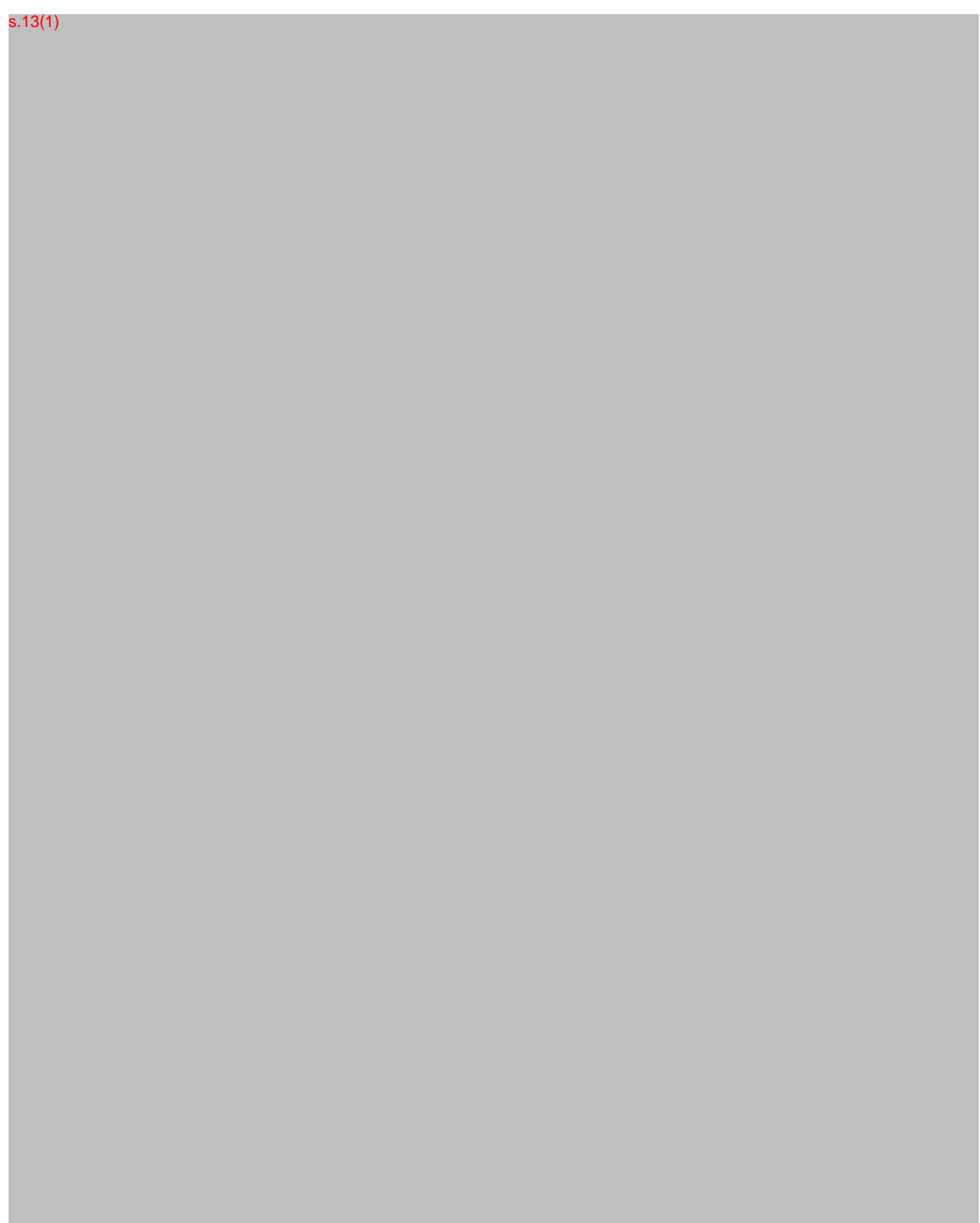


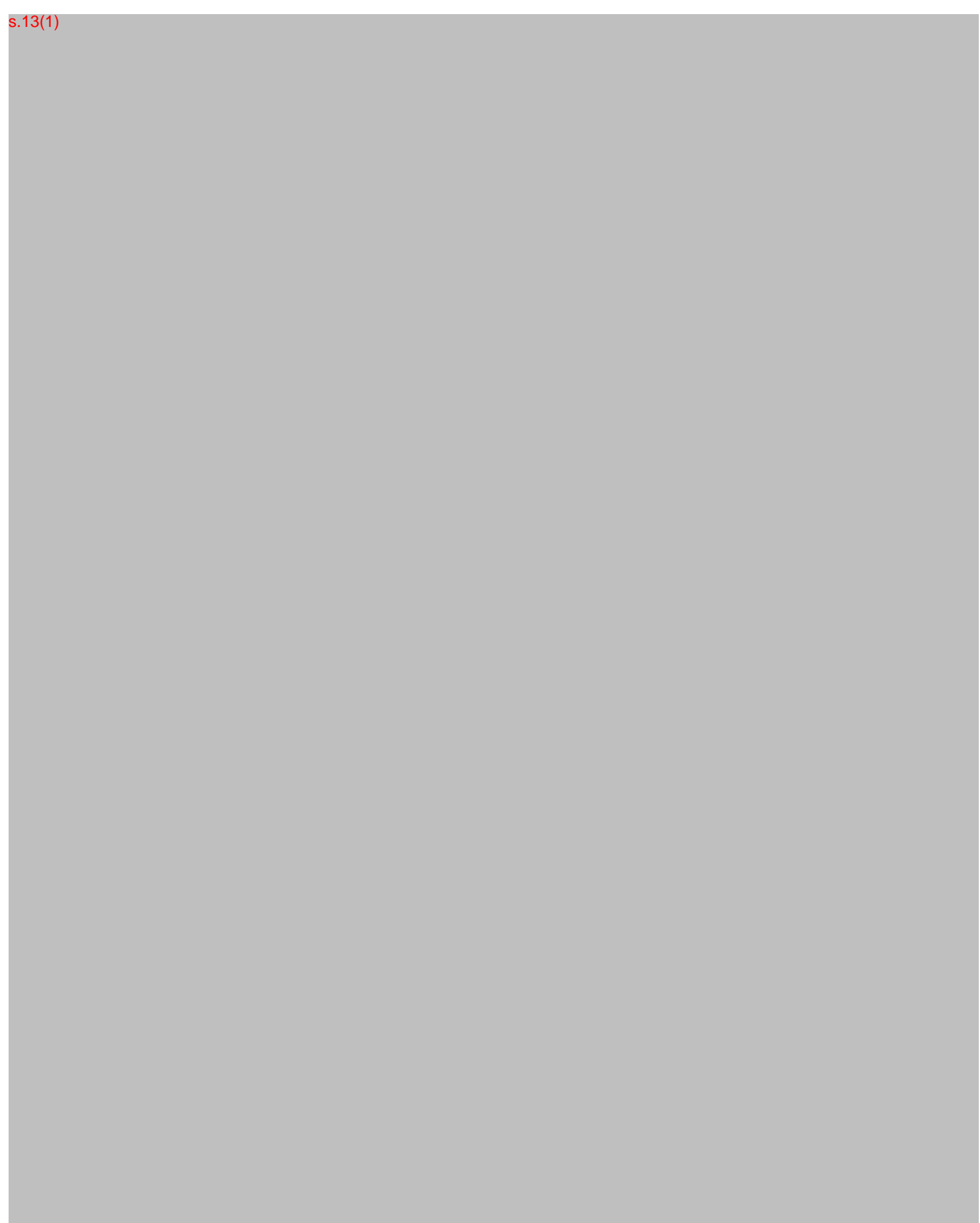


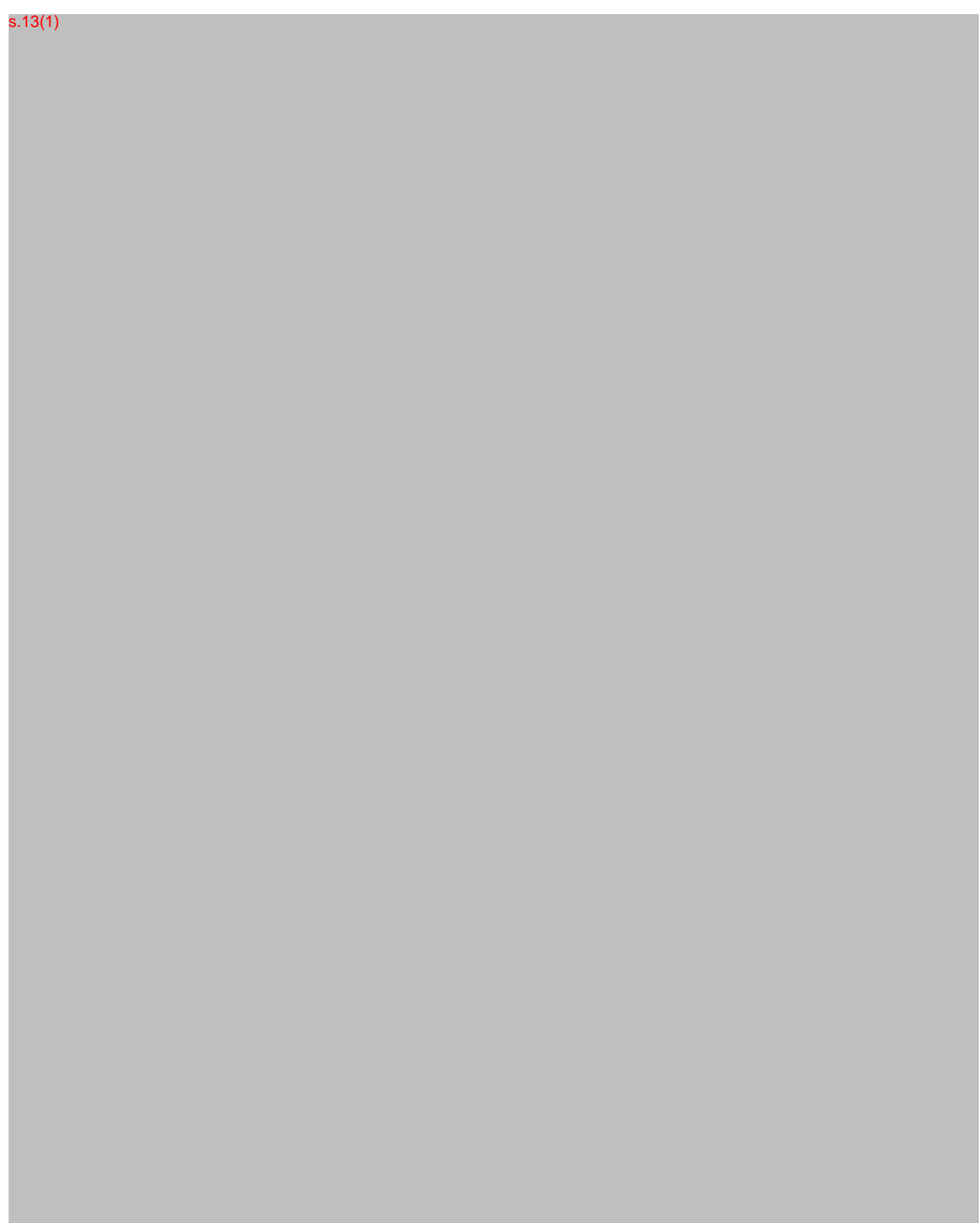


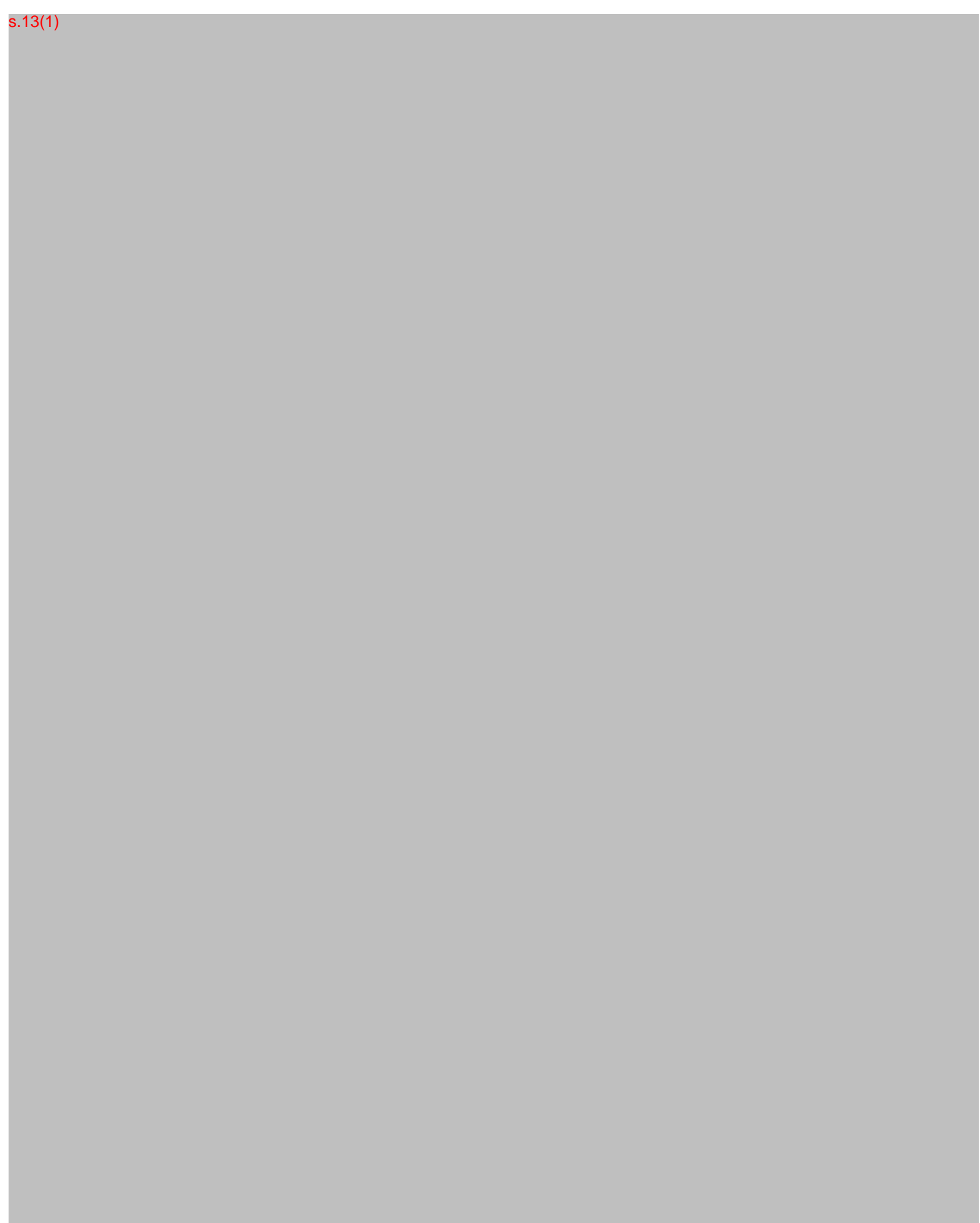


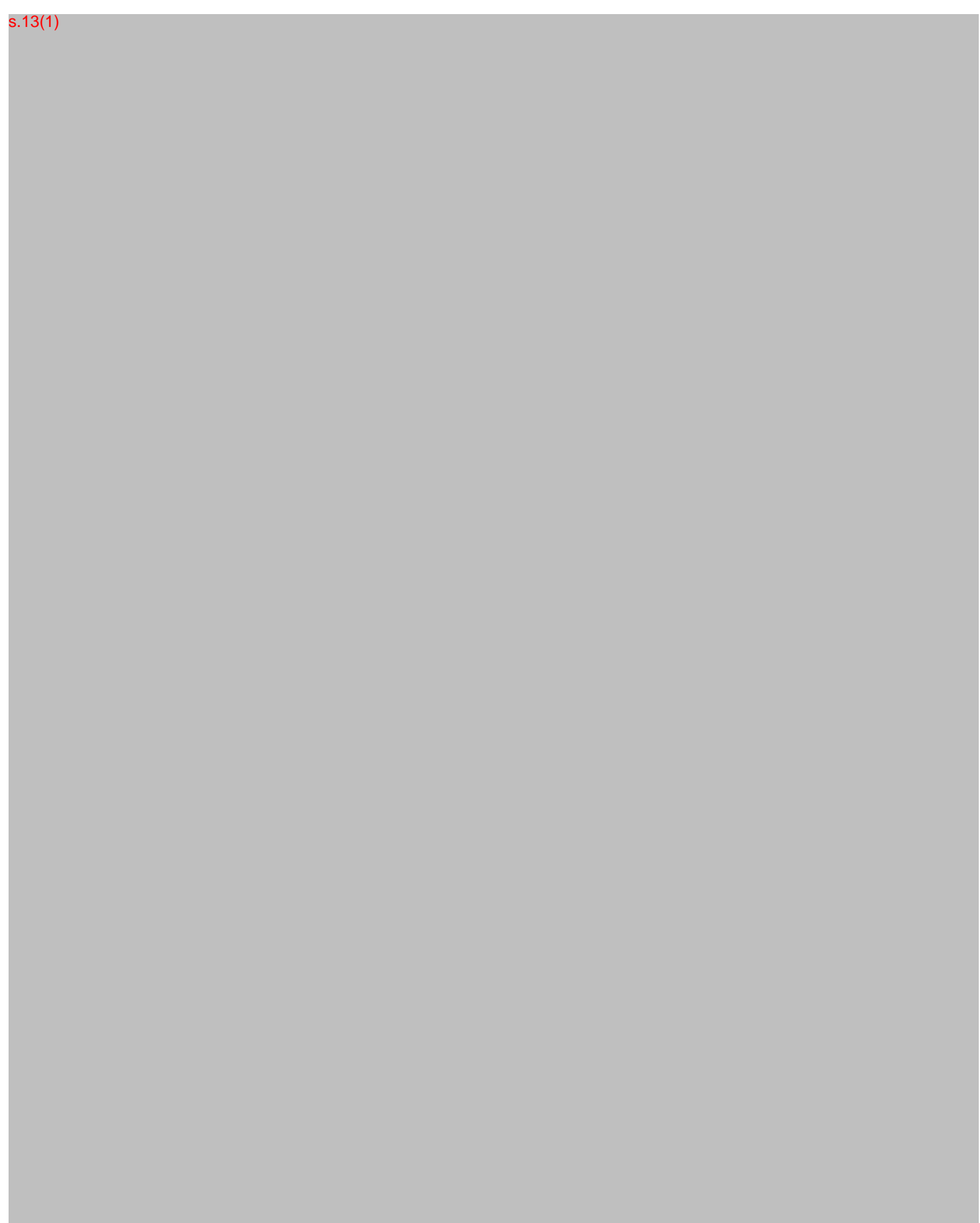


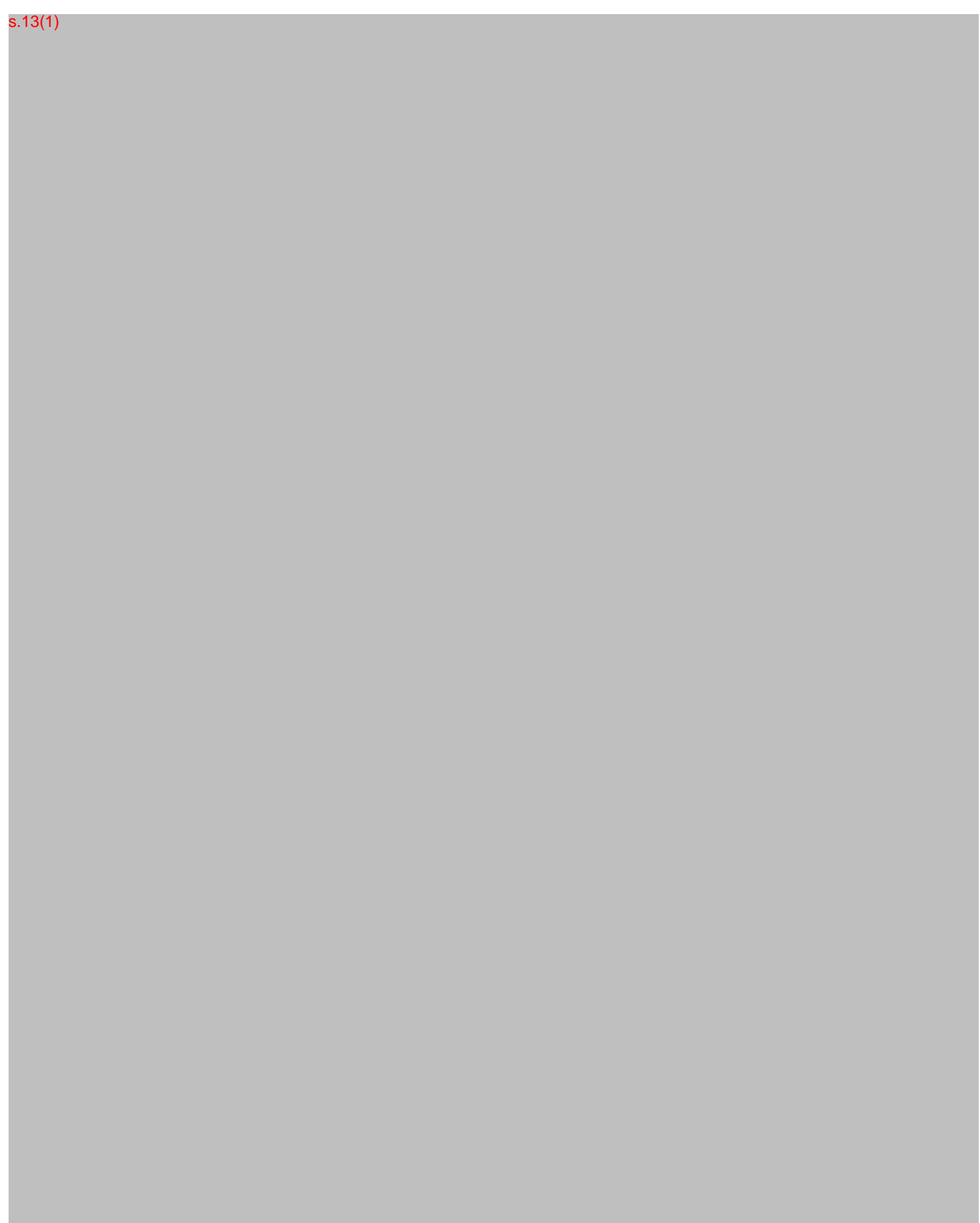


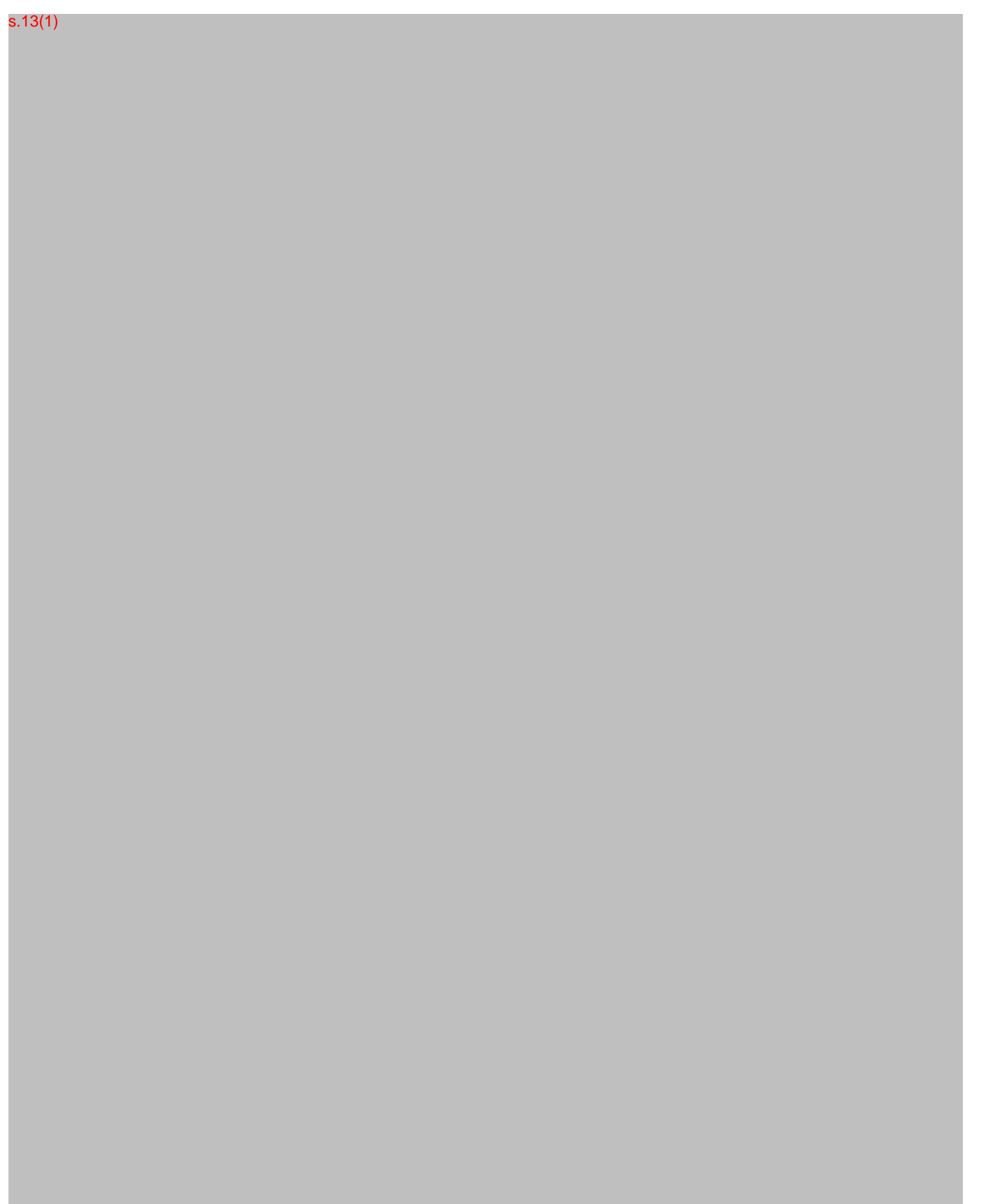


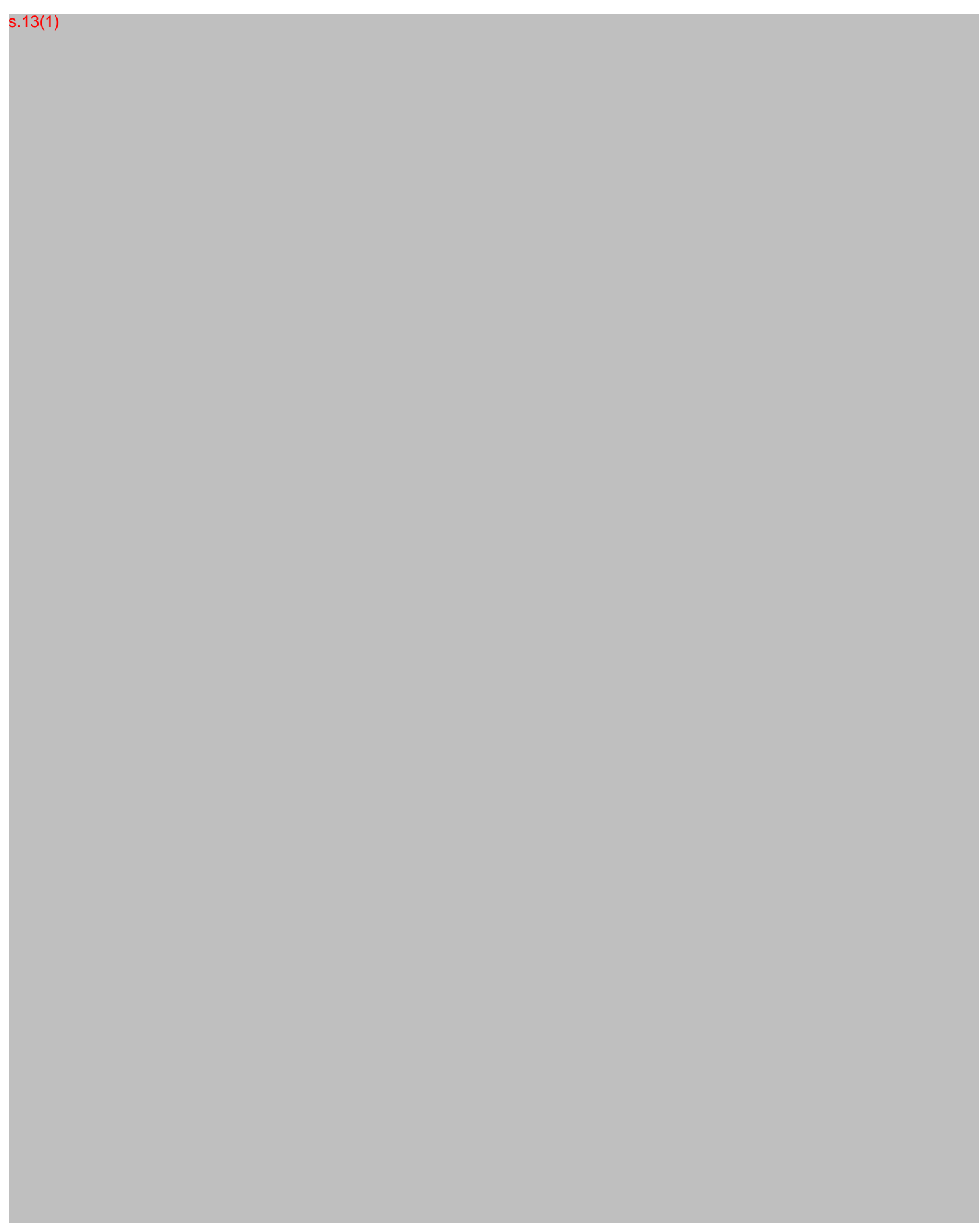


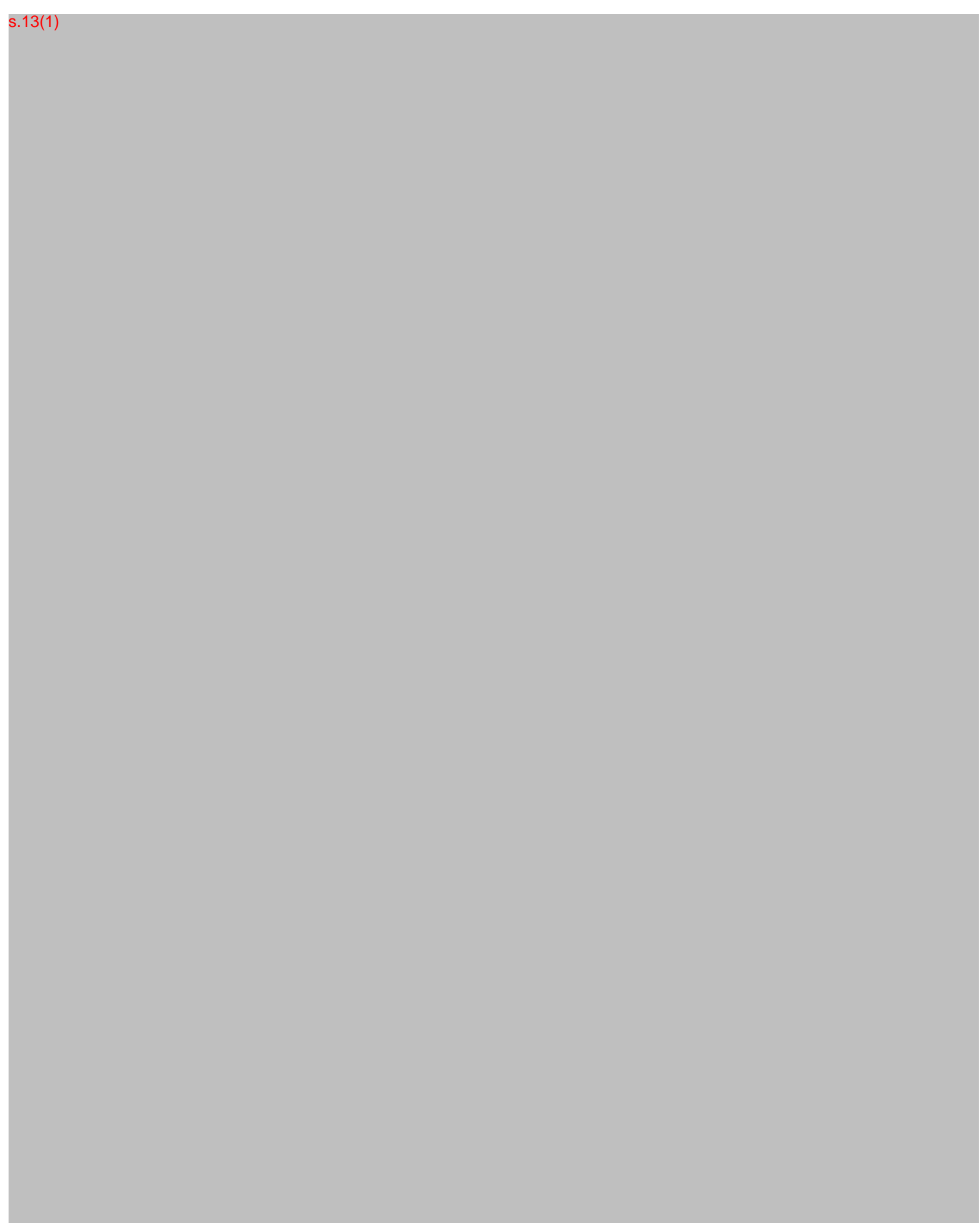


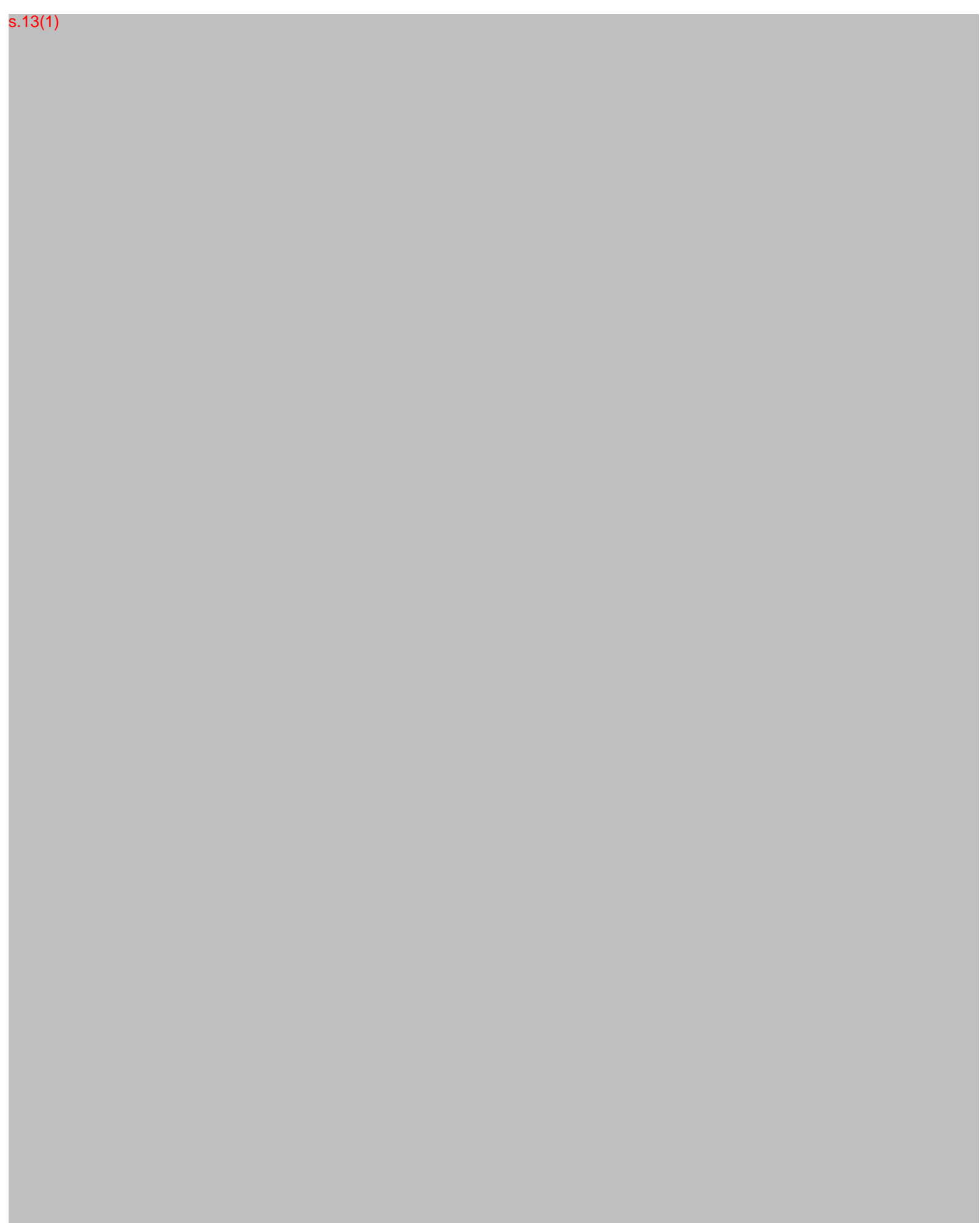


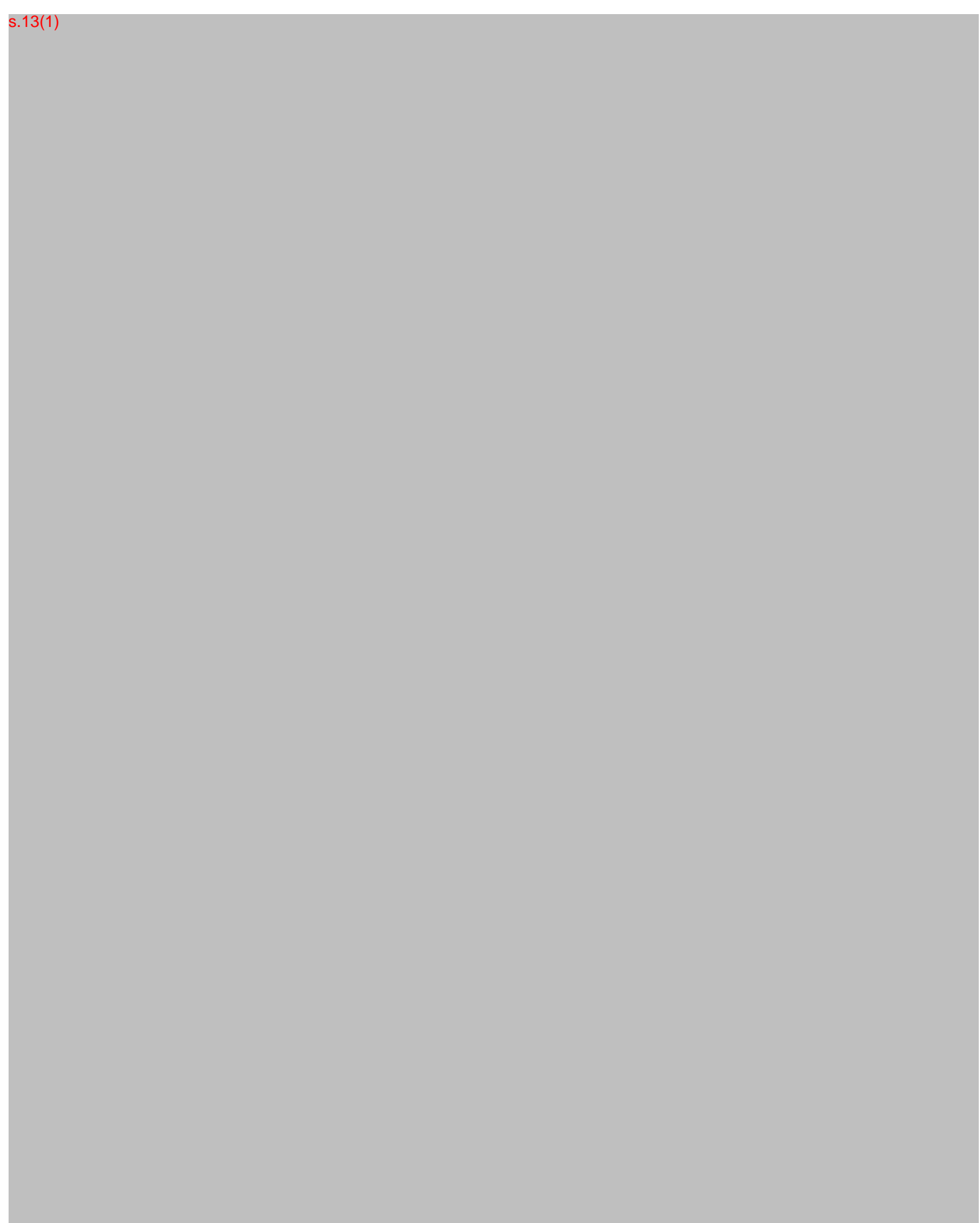


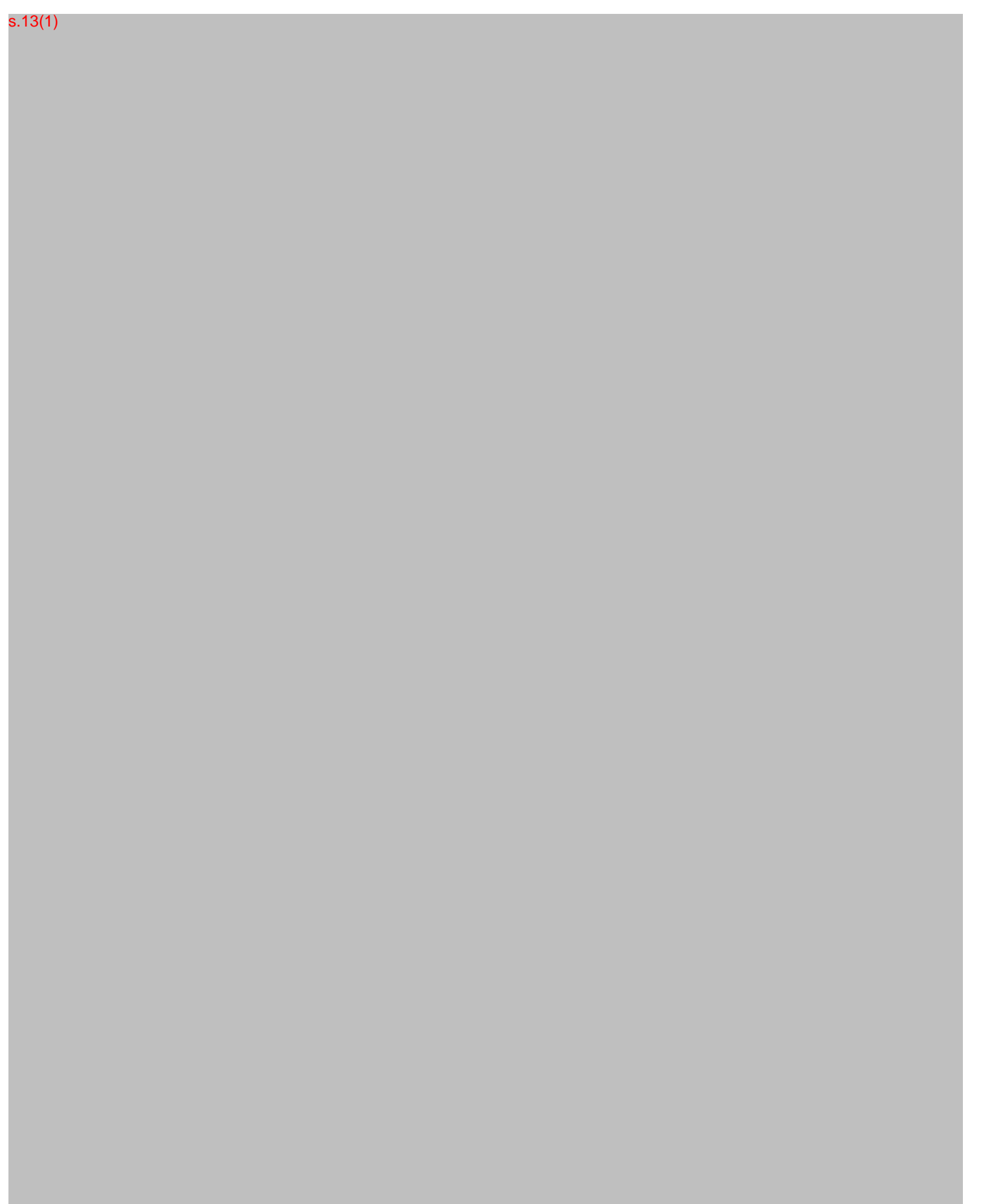


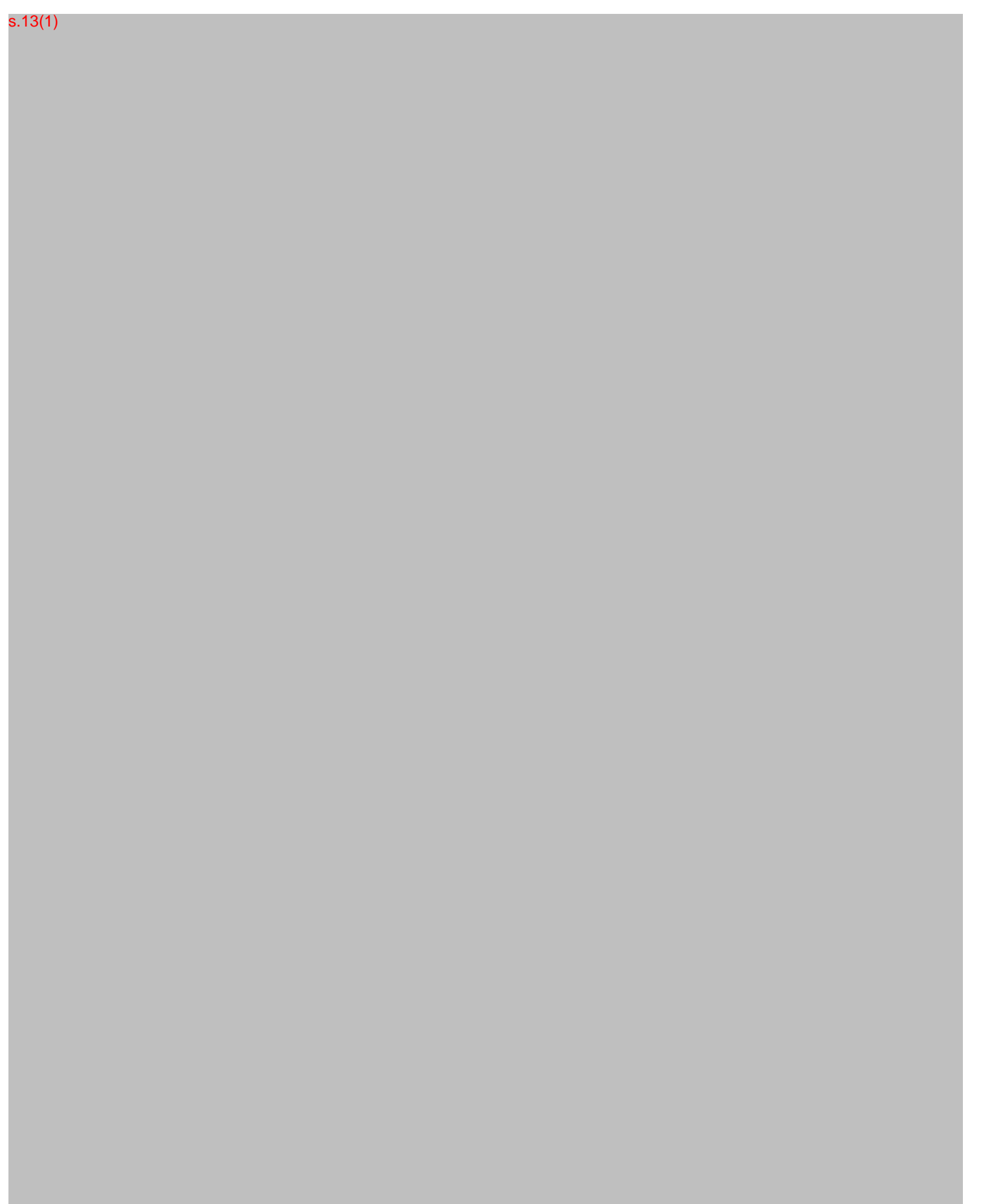


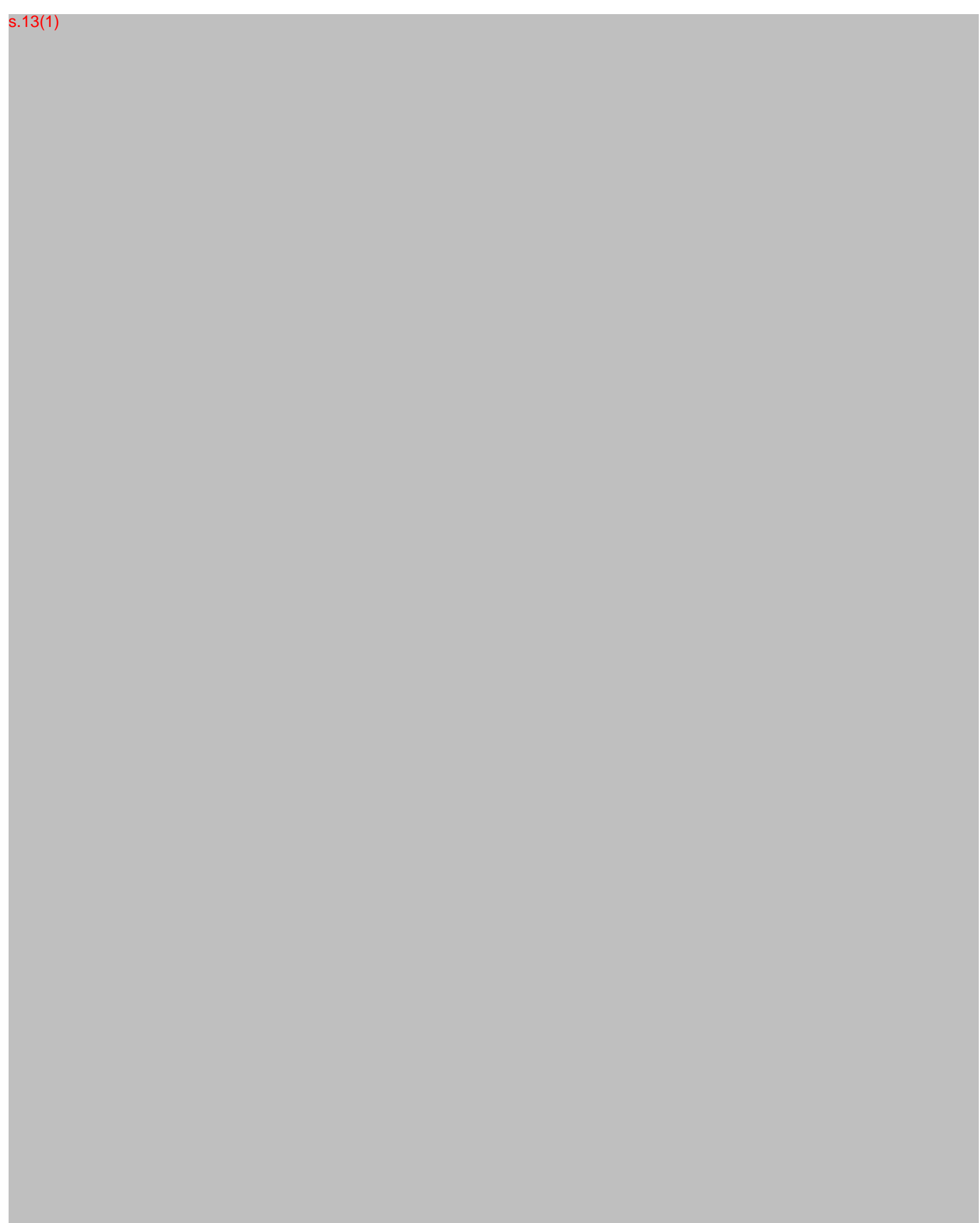


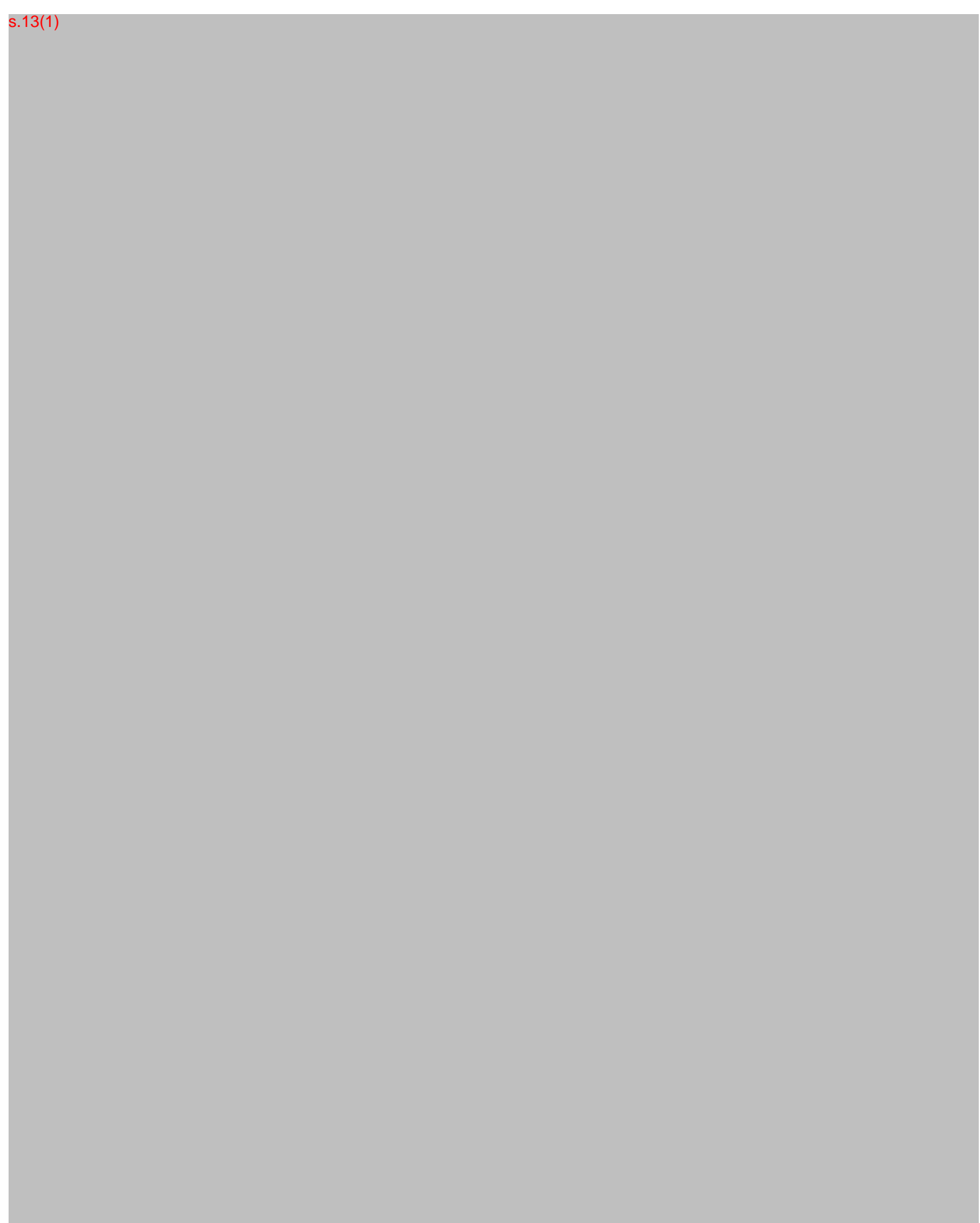


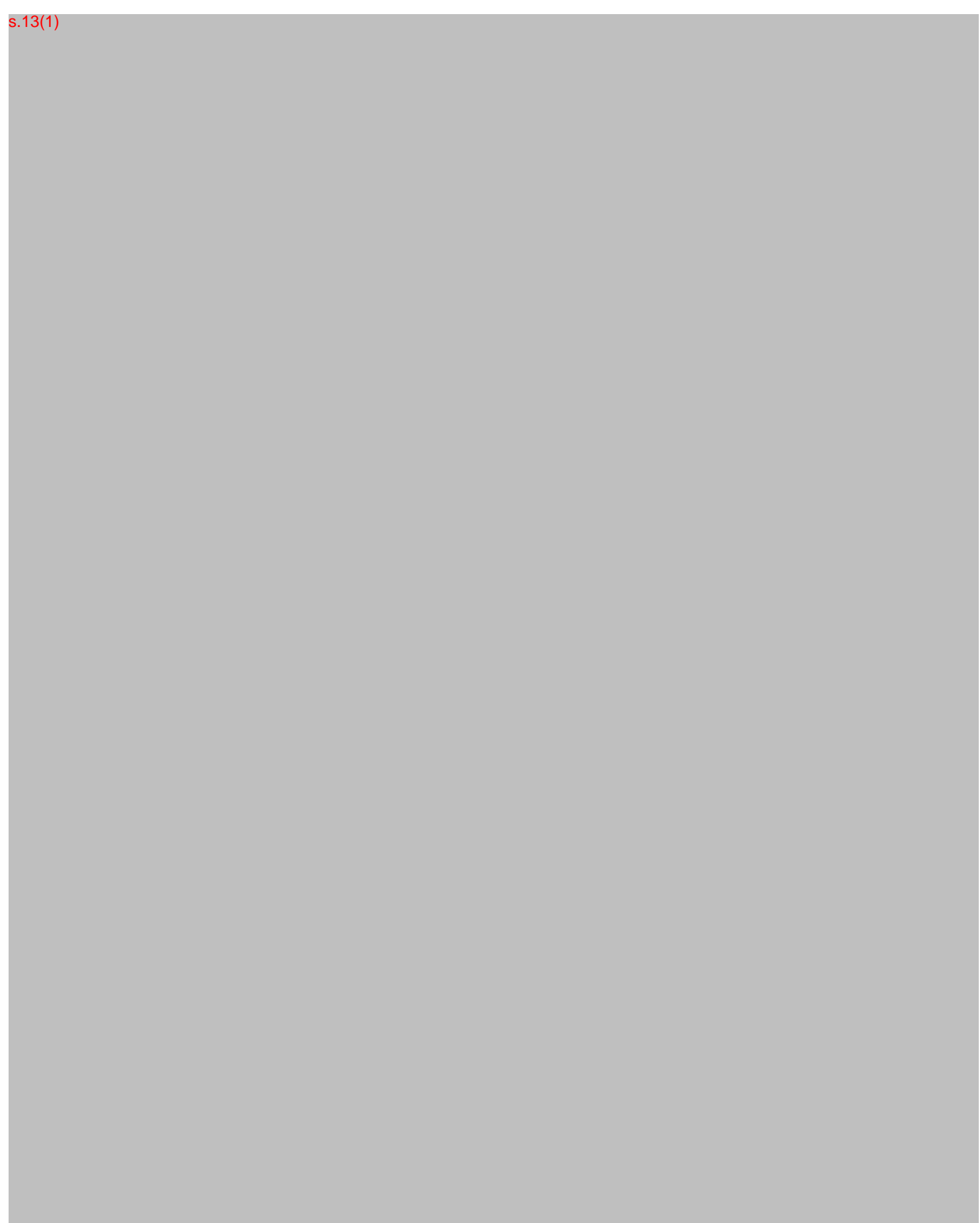


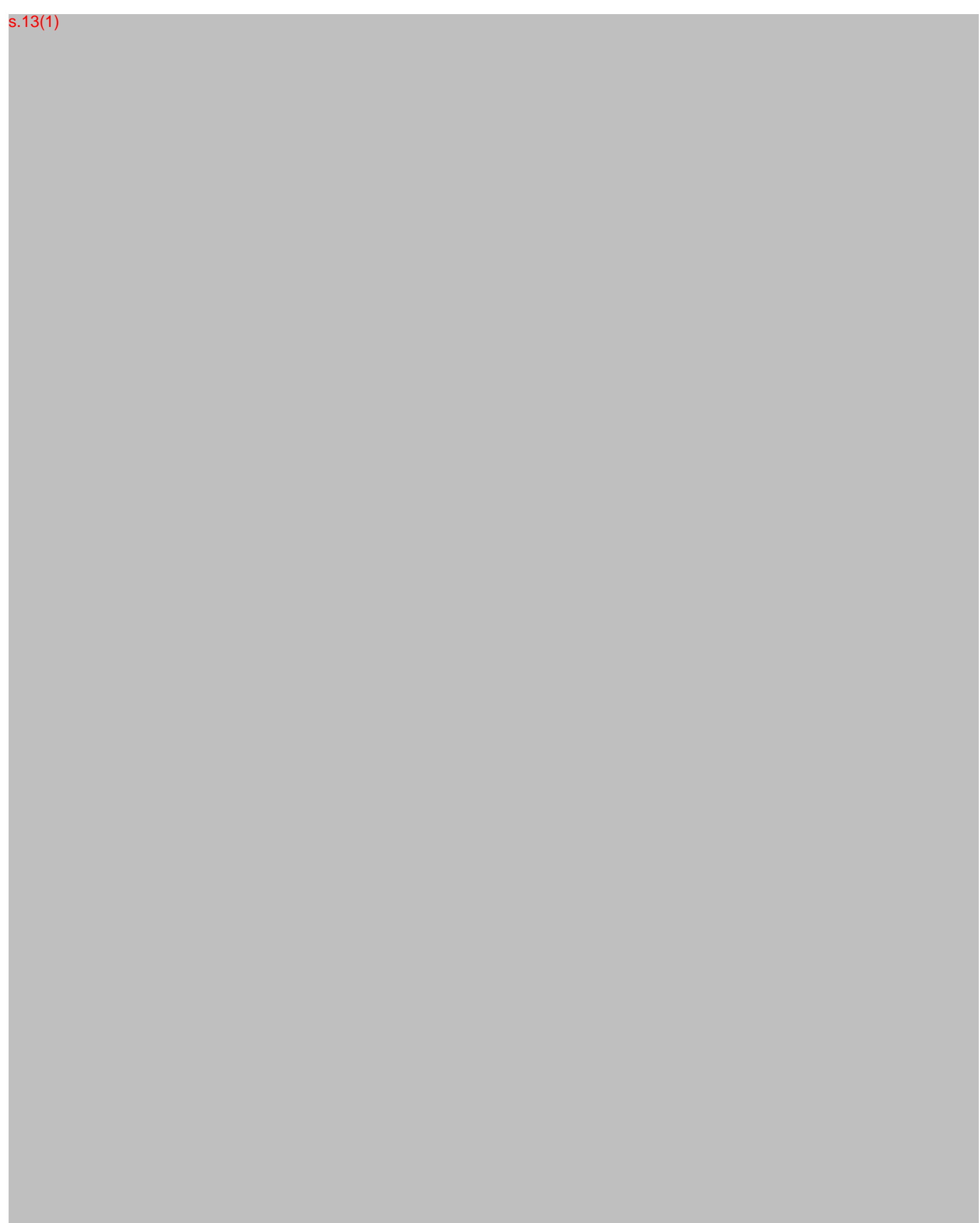


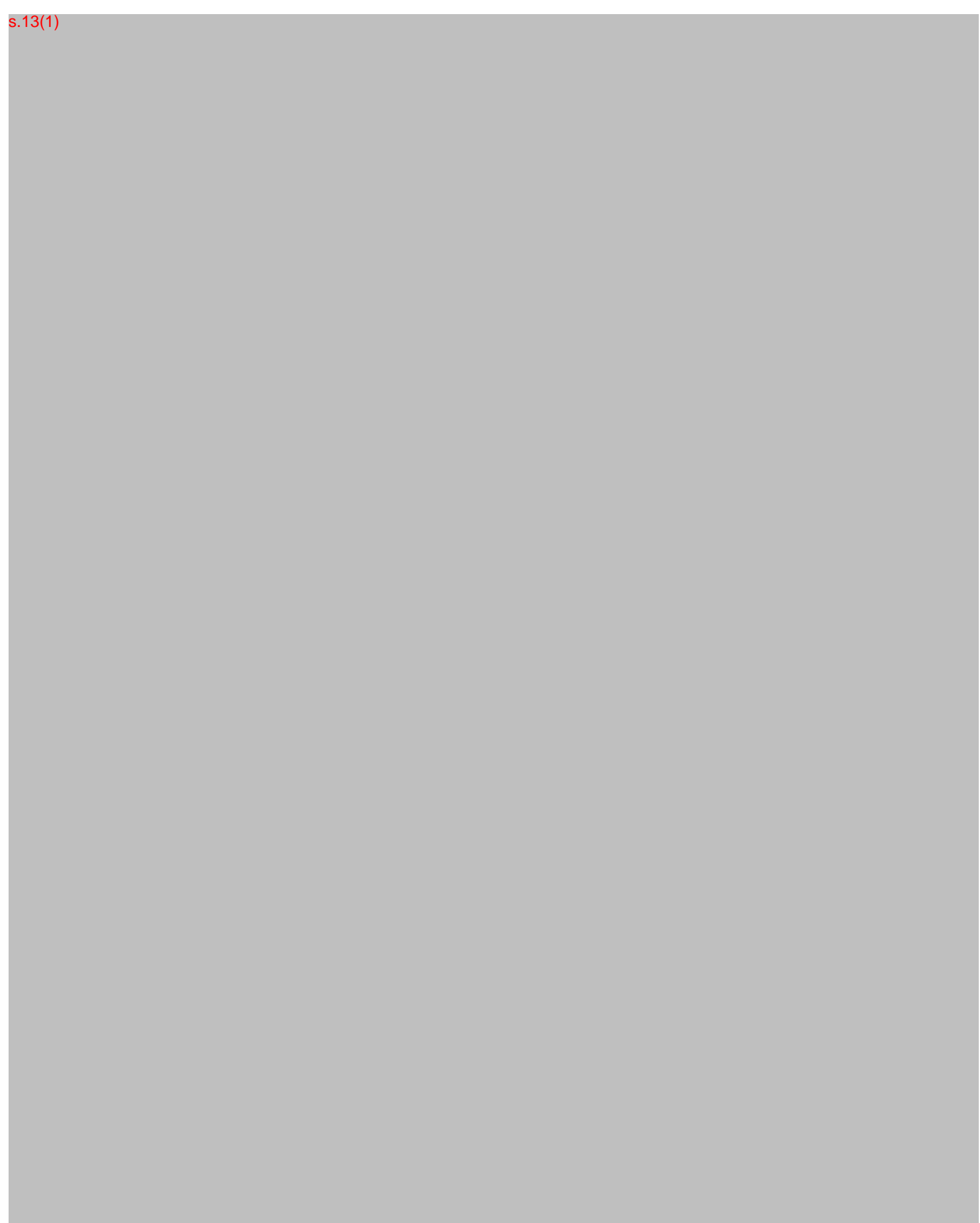


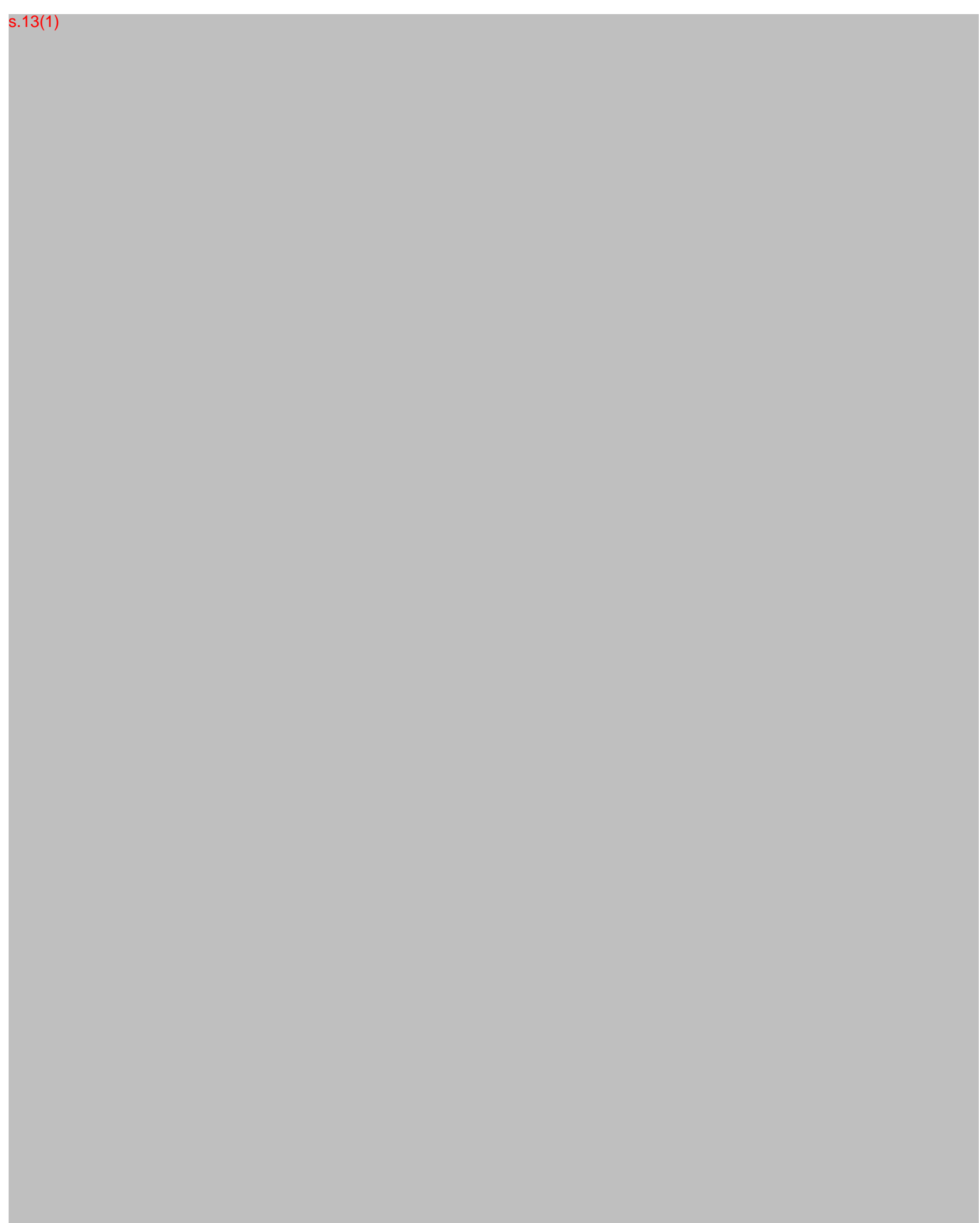


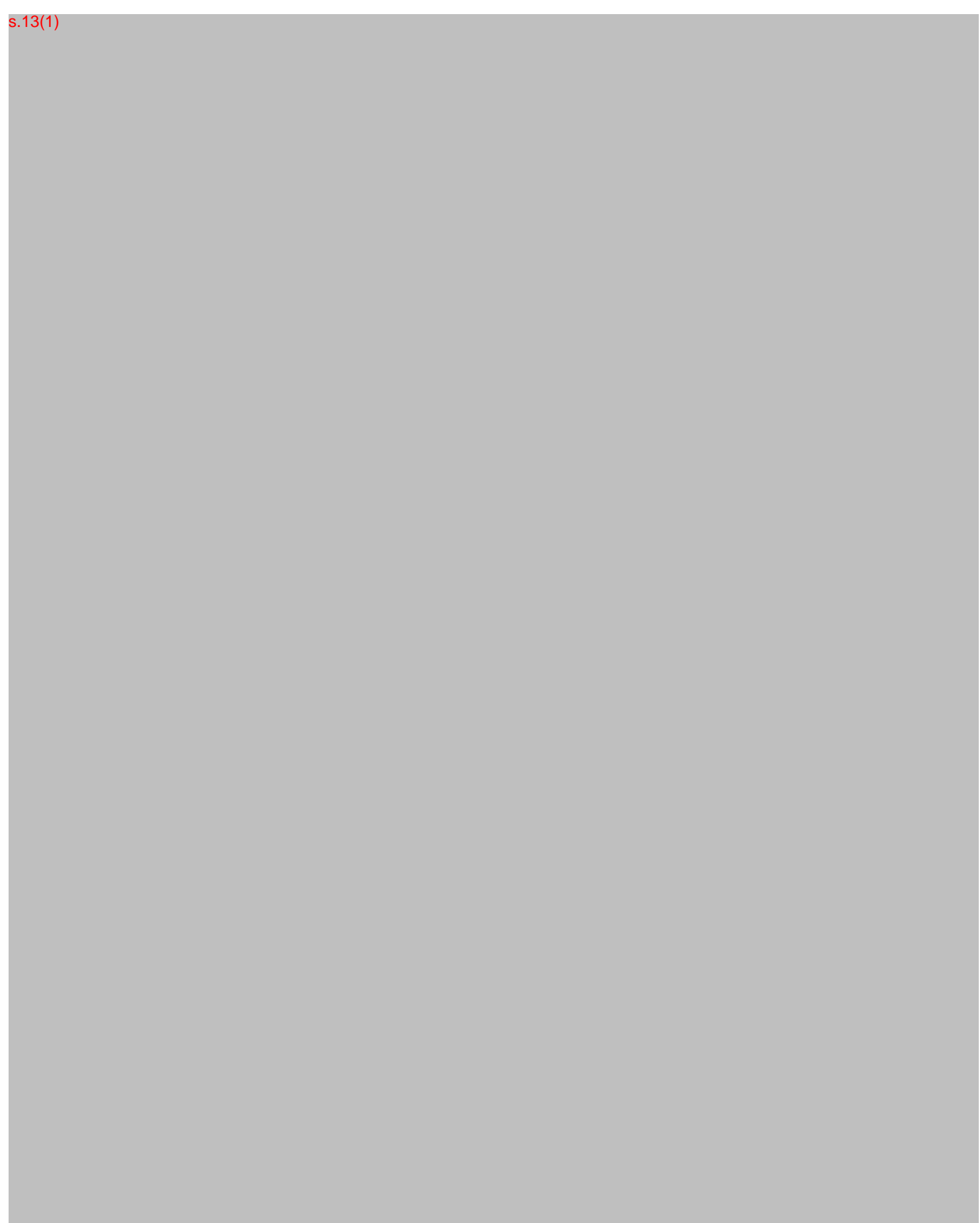


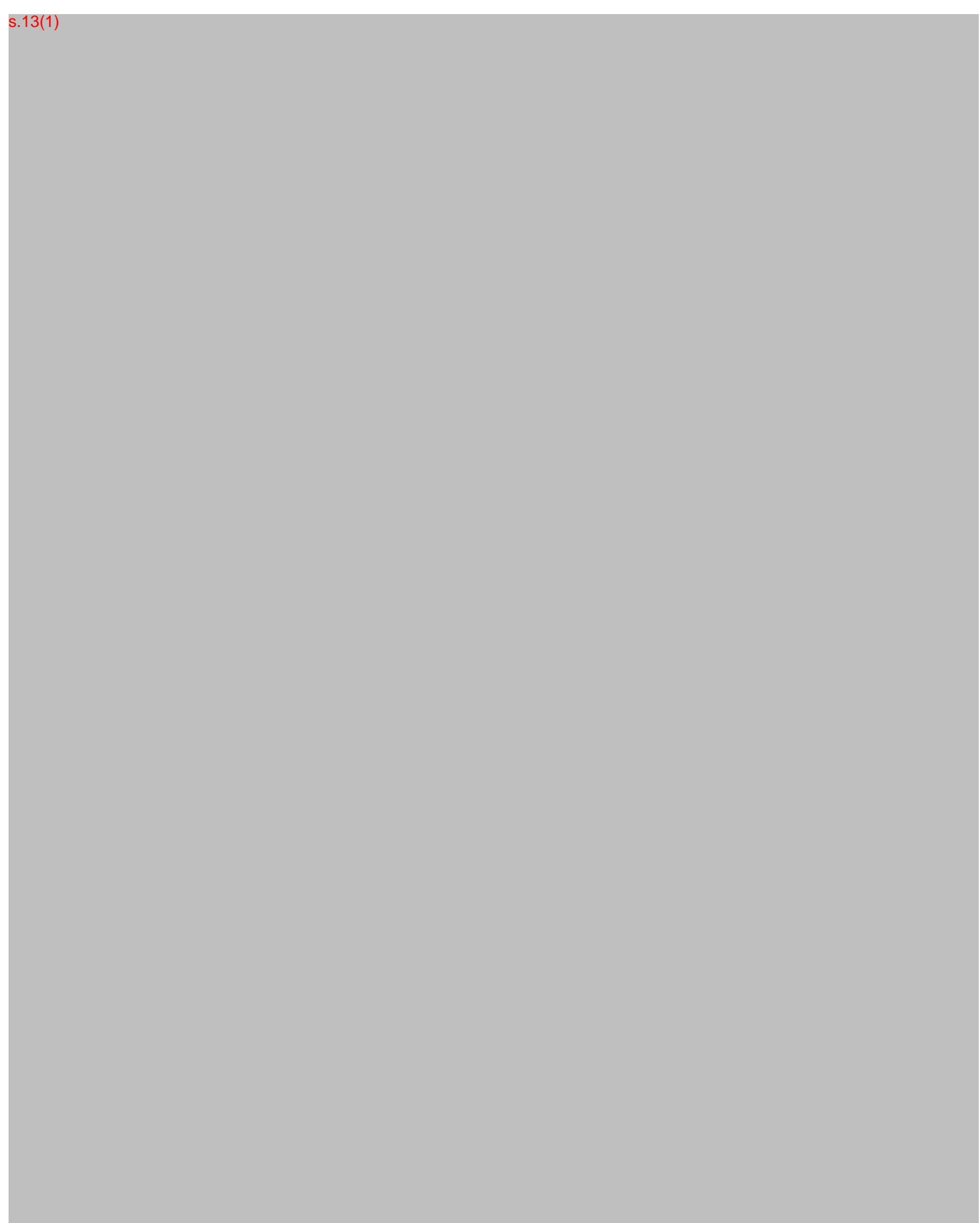


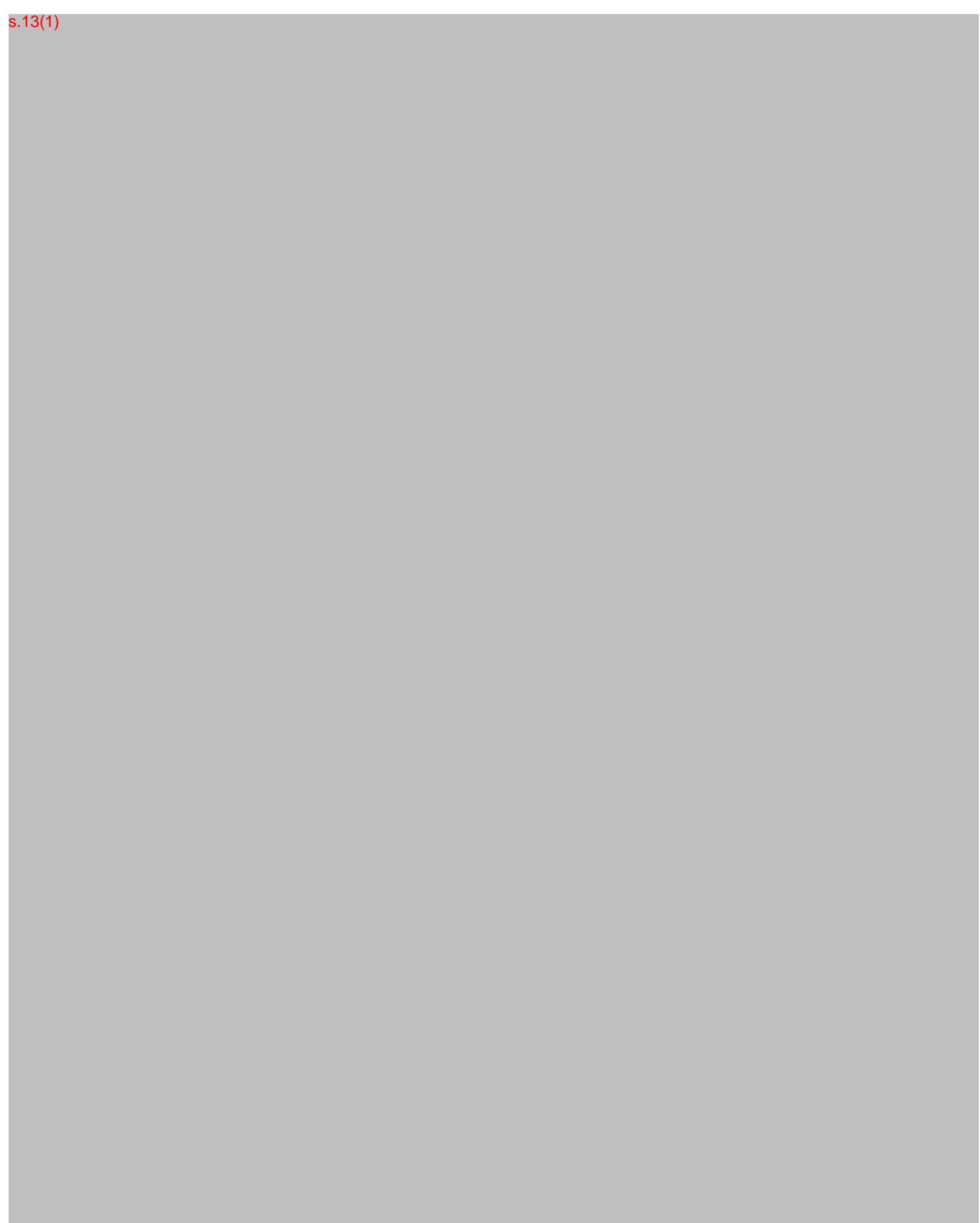


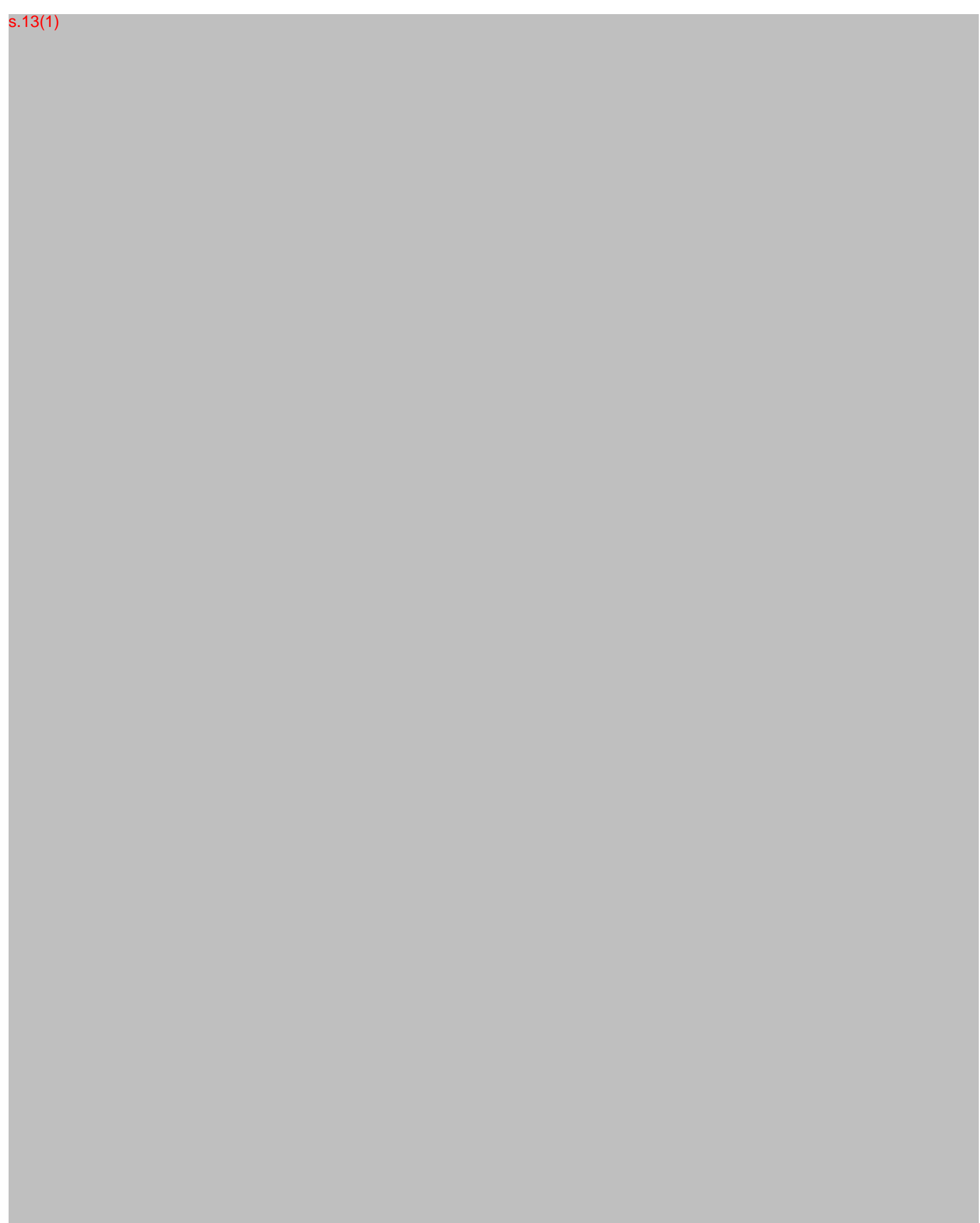


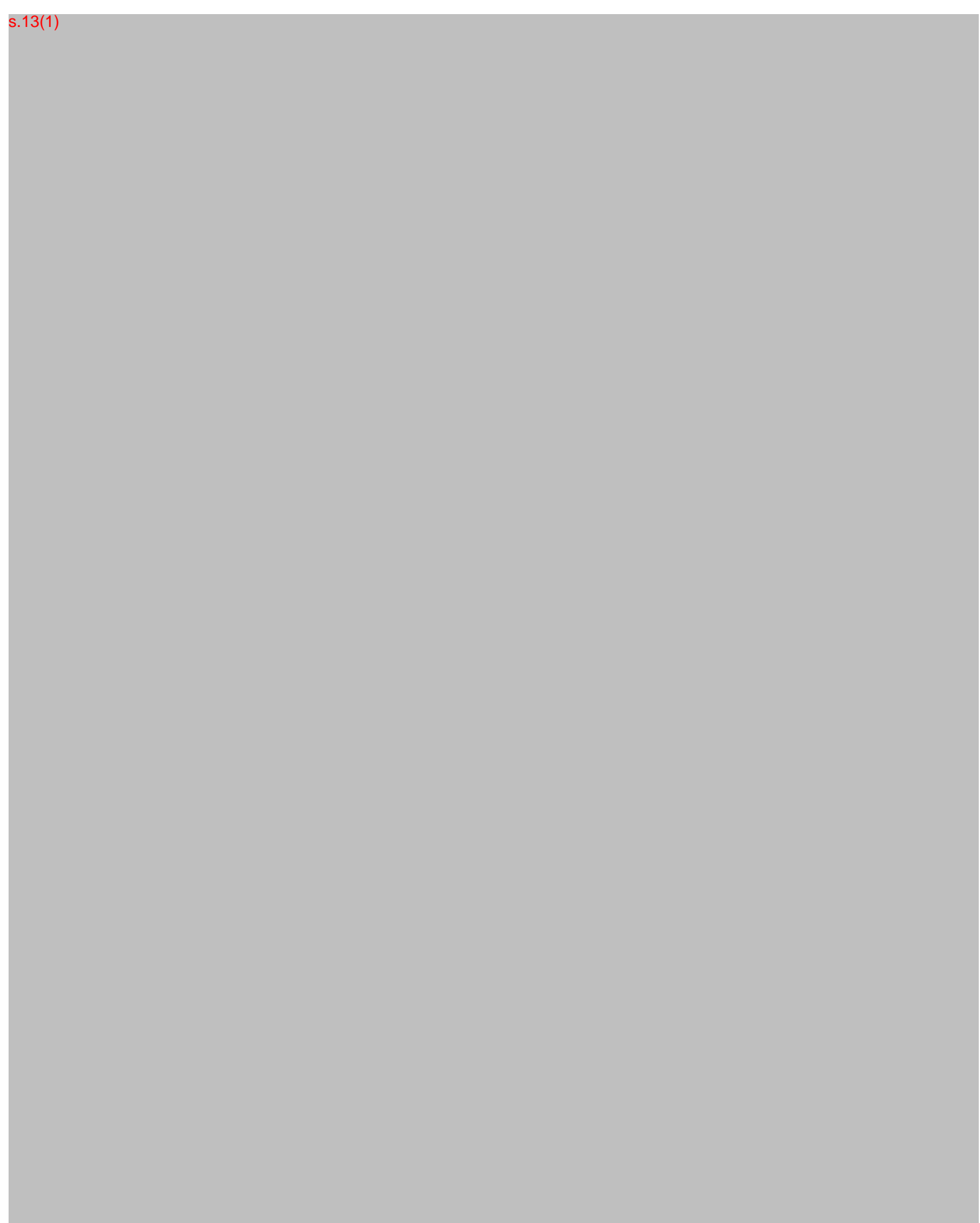


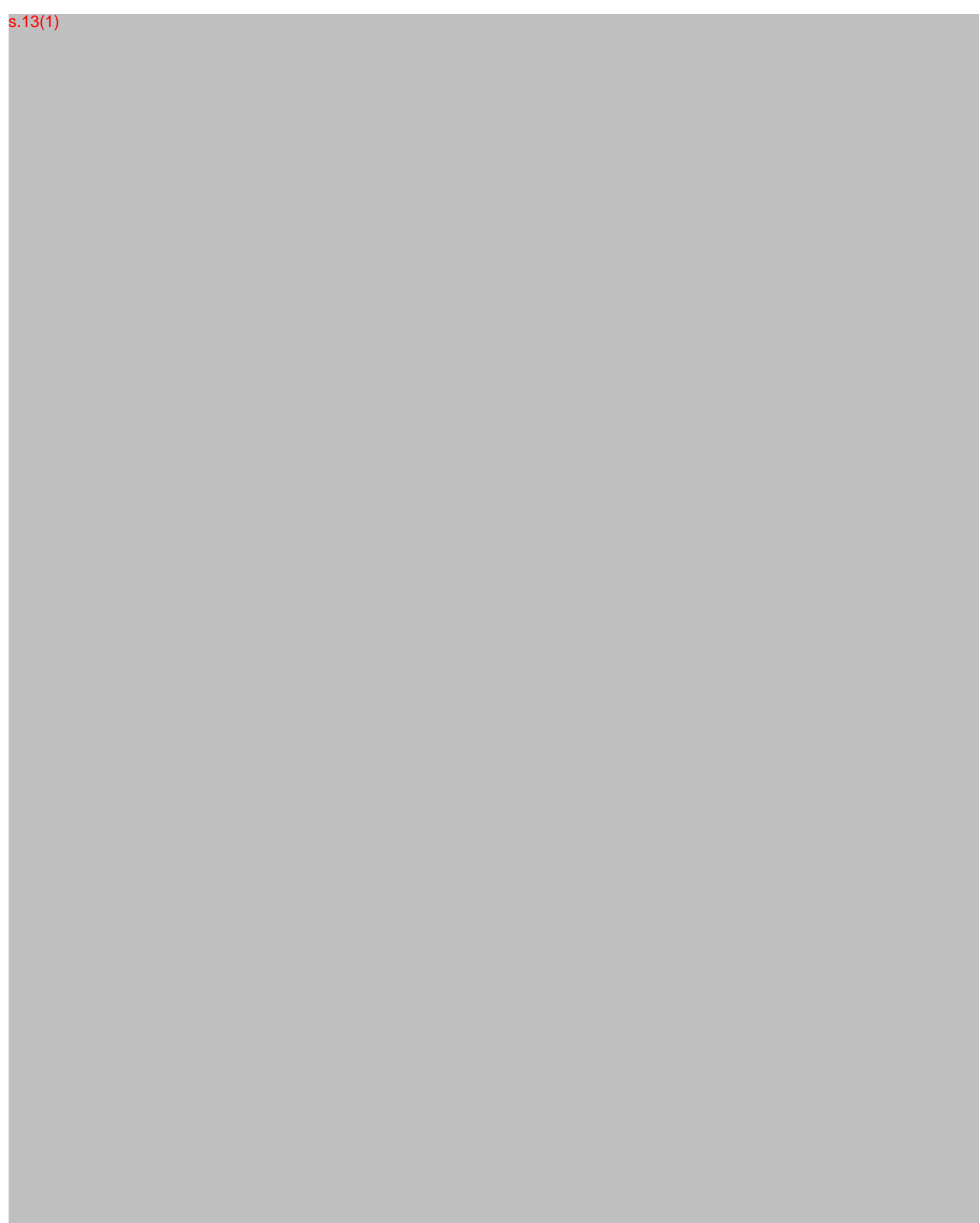


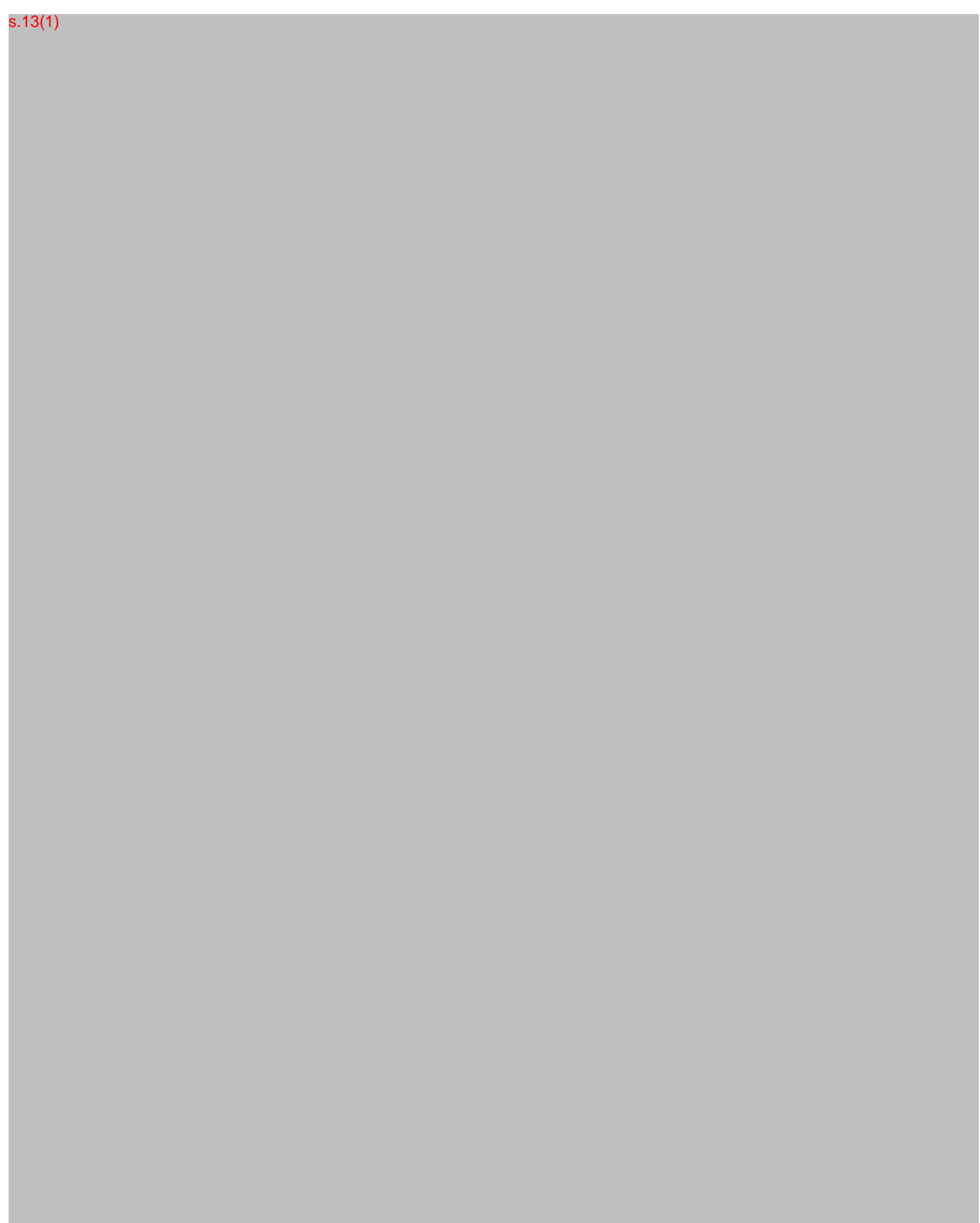












RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

Evaluation Guide: 0 = Unsatisfactory 1 = Poor 2 = Average 3 = Good 4 = Very Good 5 = Excellent

- 0 = Unsatisfactory** The Submission is Unsatisfactory with the Proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor** The Proponent barely satisfies the criteria. Significant risk may exist if proceeding with the supplier and would require major effort to develop a satisfactory performance level.
- 2 = Average** The Proponent is able to satisfy the criteria but further evidence and information is required to test and substantiate performance level claims.
- 3 = Good** The Proponent has demonstrated that the criteria have been clearly satisfied and that they understand the requirements substantiated by detailed explanation. Actual experience may be limited in some areas.
- 4 = Very Good** The Proponent has demonstrated that the criteria have been clearly satisfied and substantiated by experience in providing a significant level of beneficial insight and knowledge in the proposed solution.
- 5 = Excellent** The Proponent has clearly demonstrated that they satisfy or exceed the criteria by proposing a superior solution, substantiated with experience, knowledge and references.

Evaluation - Technical Proposal (Dept. to review)		Evoke			Focal											
Evaluation Criteria	Weight	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%	s.13(1)					0.0%			0.0%			0.0%			0.0%
Executive Summary Provide a brief executive summary of your Proposal.	5%						0.0%			0.0%						
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%						0.0%			0.0%						
Sustainability (Environmental and/or Social) - See Response to Supplier Diversity section/checklist to be completed by SCM	5%						0%			0.0%						
SUBTOTAL OF TECHNICAL SCORES	85%						81.0%			80.5%			0%			0.0%
General Remarks (MANDATORY)		s.13(1)														

RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

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		Evoke			Focal											
Evaluation - Technical Proposal (Dept. to review)																
Evaluation Criteria	Weight	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%	s.13(1)														
Executive Summary Provide a brief executive summary of your Proposal.	5%															
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%															
Sustainability (Environmental and/or Social) - See Response to Supplier Diversity section/checklist to be completed by SCM	5%															
SUBTOTAL OF TECHNICAL SCORES				54.0%			79.0%			0.0%			0.0%			0.0%
General Remarks (MANDATORY)		s.13(1)														

RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

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		EVOKE					FOCAL				
Part 2 - Evaluation - Commercial Proposal (Purchasing to review)		15%									
<i>All Costs for Base Proposal or 'best' Alternative Proposal</i>	15%	Lowest Proposal \$/This Proposal x Weight =Weighted Score			Weighted Score	Lowest Proposal \$/This Proposal x Weight =Weighted Score			Weighted Score		
Lowest Price		\$				70,000.00					
Bidder Price		\$ 70,000.00			15.0%	\$ 73,402.00			14.3%		
TECHNICAL SCORES	85%				69.5%				83.2%		
TOTAL SCORE	100%				85%				97.5%		
Part 3 - Evaluation - Technical Proposal (Dept. to review)		60%									
Evaluation Criteria	Weight	Charling	Chris	Patrick	Score (0-5)	Weighted Score	Charling	Chris	Patrick	Score (0-5)	Weighted Score
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%	s.13(1)									
Executive Summary Provide a brief executive summary of your Proposal.	5%										
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%										
Sustainability (completed by SCM):	5%										
SUBTOTAL OF TECHNICAL SCORES	85%					69.5%					83.2%

General Remarks - Charling



s.13(1)

General Remarks - Chris

General Remarks - Patrick



EVALUATOR'S GUIDELINES AND SCORING MANUAL

REQUEST FOR PROPOPAL PS20230002

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

February 7, 2023

Dino Goundouvas
Supply Chain Management

1. Introduction

Thank you for your participation in the evaluation of this request for proposals (RFP).

These guidelines are provided to:

- 1) assist you with your evaluation
- 2) maintain consistency amongst evaluation team members in the determination of a successful proponent
- 3) ensure that there is no conflict of interest in your participation in this evaluation. In accordance with the policies prescribed by the City of Vancouver.

Proponents spend a significant amount of time and resources preparing and supporting the offers they submit to provide products and professional and technical services to the City. The City benefits from this investment since it contributes both quality and choice to the City's strategic plans. In return for this effort, proponents are entitled to a full and fair evaluation.

This document is designed to assist evaluators in their evaluation of proponents' submissions and to help ensure the establishment of a clear record for the rationale used in assigning scores against the stated evaluation criteria. The City must be prepared to provide all proponents with feedback on a criterion-by-criterion basis and be able to support the reasons for the scores assigned by the evaluation committee.

2. Conflict of Interest

Any member of the evaluation committee who feels that they are, or may be, in a conflict of interest must declare this fact to the RFP Facilitator. If a potential conflict is disclosed, the RFP Facilitator will need to decide whether the member will be permitted to remain as an Evaluator. The Standards of Conduct for Public Service Employees Engaged in Government Procurement Processes provide a number of examples of conflict of interest. A conflict could exist if the individual:

- (i) has a friendship or familiar relationship with one of the proponents; or
- (ii) works for a company that is submitting a response; or
- (iii) has a strong bias for, or against, one of the proponents; or
- (iv) has a significant interest in a company submitting a response; or
- (v) has a direct or indirect financial interest in a proponent's business; or
- (vi) has an immediate family member who has input into a proponent's proposal; or
- (vii) has assisted in the preparation of a proposal; or
- (viii) has received a gift from one of the proponents.

All Evaluators are required to sign Non-disclosure and Conflict of Interest declaration forms which state the terms and conditions of conduct for the evaluation process. **Please**

be aware that all documents are subject to disclosure under the Freedom of Information and Protection of Privacy Act of British Columbia.

3. General

During the evaluation process, it is important to treat all proponents fairly and equally, and to evaluate their bids in accordance with the process described in the RFP. Care must be taken throughout the process not to take any actions or make any decisions that could be construed as providing an unfair advantage to any proponent.

Therefore:

- Each evaluator must act independently and be free from bias and conflict of interest, act objectively and consider only the information received via the RFP process. This means that the scoring must be based strictly on the merits of the proposal.
- It is each evaluator's responsibility to ensure all documentation related to the evaluation process is kept secure at all times;
- Evaluators are not to discuss the evaluation, scores or any issues of the RFP with any of the proponents or vendors;
- Evaluators should avoid discussing any aspect of the evaluation or share any information submitted, including submissions or other related documents with anyone INCLUDING other members of the evaluation committee (unless this discussion is being facilitated by the RFP Facilitator); and
- All questions should be directed to the RFP Facilitator.

4. Evaluation Procedure

Prior to reading or scoring the Proposals, the evaluator should read the RFP document, Questions and Answers, and any amendments or addenda. Copies of these documents will be provided by the RFP Facilitator.

- a. Accompanying this evaluation guidelines document is the RFP Evaluation Form for each proposal. The evaluator is required to write his/her name on each RFP Evaluation Form.
- b. Proposals must be evaluated on their individual merits against the evaluation criteria stated in the RFP PS20230002 and awarded scores using the scoring guidelines provided.
- c. Scores must not be awarded by comparing proposals against each other.
- d. Only information enclosed in the proposals may be used during the evaluation process. Information about or knowledge of the proponents that are external to the proposals must not be used in the assessment of proposals.
- e. On the RFP Evaluation Form, the scoring scale (0 to 5) is located at the bottom of each page and explained in more detail in the following Section 5. Each evaluator is to enter, in his/her opinion, the most applicable level as judged in meeting the requirement, and provide a brief explanation substantiating the score. For example, is there anything lacking or outstanding in the Proponent's response. Also, comments should be provided if an item receives a score of 0, 1, 4, or 5.

- f. At the end of the scoring section, a general comments section has been provided where the evaluator has an opportunity to provide further comments with respect to the proposal. *These comments are important for debriefing unsuccessful proponents.*
- g. Each category has been assigned a weighting value. The combination of the weights and all scores will be calculated to determine the highest rated proponent(s). This may provide the basis for determining a short-list of proponents or a successful proponent, if any, after all factors have been considered.
- h. When evaluating the proposals, the following procedure is recommended:
 - (i) Read the proposal in its entirety before making any notes or assessing any scores. This will provide you with an overview of what is being proposed.
 - (ii) Go to the sections in the proposal you have been asked to evaluate, and read through the entire section(s). Make notes where applicable.
 - (iii) Read the section again, assess and provide a score for each criterion and include brief comments that substantiate your decision. The comments may be referred to in any post assessment evaluators meeting; they are also beneficial for preparing any debriefing reports or meetings.
- i. When all proposals have been evaluated, check to ensure that all items have been addressed and that there are no omissions. Return the RFP Evaluation Form to SCM to compile and summarize the scores.

5. Evaluation Assessment Guidelines

Note: In the absence of any additional instructions provided by SCM to the team, please consider the following as the guideline for assessment.

Following are the assessment guidelines for scoring the proposals:

- 0 = Unsatisfactory:** The proposal is unsatisfactory, with the proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor:** The proponent barely satisfies the criteria. Significant risk may exist if proceeding with the proponent, requiring significant effort to develop a satisfactory performance level.
- 2 = Average:** The proponent is able to satisfy the criteria but further information is required to substantiate the proponent's claims of compliance with the particular requirement.
- 3 = Good:** The proponent has demonstrated that the requirement has been clearly satisfied and a sound understanding of the particular requirement, substantiated by detailed explanation and other supportive evidence. Related experience may be limited in some areas.
- 4 = Very Good:** The proponent has clearly demonstrated that the requirement has been satisfied, substantiated by a strong level of related

experience and in providing a significant level of beneficial insight and knowledge in the proposed solution.

5 = Excellent: The proponent has clearly demonstrated that they exceed the requirements by proposing an exceptional solution, substantiated with a strong level of understanding of the City's requirements plus related experience, resources, knowledge, skills and references.

All criteria will be assessed using the scoring guidelines outlined above.

The score for 'Price' will be determined by SCM using a formula outlined below whereby the lowest price for the complete package requested gets the full points available and the other pricing proposals are rated in relation to the lowest price.

The following formula will be used:

$$S = ((Lp / P) * W) * 100 \text{ where:}$$

S = Weighted percentage score
 Lp = Lowest priced bid
 P = Price
 W = percentage weight

These calculations will be done by SCM and will be shared with the evaluation committee at the evaluation meeting once the management; technical and financial scoring has been completed.

6. Evaluation Responsibilities

Category	Supply Chain Management	Evaluation Team
Terms and conditions, and high level mandatory requirements	X	
RFP administrative compliance	X	
Proponent information, references	With direction from Evaluation Team	X (references)
Business requirements		X
Other: Value-added services		X
Pricing/cost	X	
Sustainability	X	

Date:	Feb 10, 2023
Employee Name:	Charling Li
Project No.:	PS20230002
Project Title:	CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

Please sign below after completing the following:

1. I understand my role in ensuring that I do not discuss or disclose any information while evaluating this proposal. <i>(See item 3 under General on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. I understand my role in ensuring that a conflict of interest does not occur. <i>(See item 2 under Conflict of Interest on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
3. I believe that I might have a conflict of interest.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

If Yes has been chosen for Item 3, please explain reason for potential conflict of interest. I have a relationship with:

Company Name: _____

Name: _____ Relationship: _____

Details: _____

s.15(1), s.22(1)


Employee's signature

Feb 13, 2023

Date

Charling Li

Print Name

REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

APPENDIX 1
PROPOSAL FORM

RFP No. PS20230002, CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE (the
"RFP")

Proponent's Name: Evoke Buildings Engineering Inc.
"Proponent"

Address: 250-997 Seymour Street, Vancouver, BC V6B 3M1

Jurisdiction of Legal Organization: British Columbia

Date of Legal Organization: Extra provincially in BC 2020/12/02

Key Contact Person: Alex Blue

Telephone: 604-260-1124

E-mail: ablue@evokebuildings.com

The Proponent, having carefully examined and read the RFP, including all amendments thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 2 to the RFP.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

s.15(1), s.22(1)

Signature of Authorized Signatory for the Proponent

February 6, 2023

Date

Alex Blue, Principal, Building Energy Specialist

s.15(1), s.22(1)

Signature of Authorized Signatory for the Proponent

February 6, 2023

Date

Sophie Mercier, Principal & Director

Name and Title

Executive Summary

Provide a brief executive summary of your Proposal.

Evoke is proposing a multi-company collaboration with RDH and AME, bringing a number of specialty focusses together under a single umbrella. The project will be led and completed by practicing energy modellers and designers with practical knowledge and current project experience, combined with policy and guideline development expertise.

The project will be led by Evoke, providing a single clear point of contact for City staff. We will work with RDH and AME to draw on specific technical expertise. Each firm's input will be led by practicing energy modellers with different areas of focus, and with both envelope and mechanical design engineers available to draw on for expertise. Elements of scope will be divided up, with Evoke acting as the technical clearinghouse to provide oversight and coordination between these elements. We also believe having multiple firms on the team will bring significant value to the City, allowing us to readily compare methodologies, perspectives, and software requirements in early discussions. In addition, the multi-company team approach will facilitate meeting the project timeline, as initial development of recommendations can proceed in parallel on different topics, bringing recommendations back together for validation, discussion, and consultation.

Initial recommendation development will draw on our existing expertise and previous modelling as well as existing sources, which will then be validated by modelling using actual recent project models that were designed and modeled based on the Energy Modelling Guidelines v2.0. These models will be updated to the proposed v3.0, in mechanical cooling and passive cooling scenarios.

Consultation is understood to be an important element of this RFP. We will plan and lead two virtual workshops as well as conducting an online survey.

Our project team members have significant experience in working with other modellers, reviewing models and outcomes, and working on development of policies, codes, guides, and standards. We have been involved in developing guides, research, and policies for the City of Vancouver, the BC Energy Step Code, UBC, ZEBx, BC Housing, the City of Mississauga, and more. We include members of technical and industry advisory groups including the City of Vancouver's UDP, CaGBC, the CSA Z5020 committee, Step Code technical advisory and more. We are involved in the industry beyond our individual firms, and are well positioned to collaboratively understand and address likely concerns both from policy makers and from users of the guidelines.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Our approach to developing initial recommendations will lean on prior work to understand and quantify impacts. Following initial development of recommendations, and discussion of those recommendations with the City, we will apply the proposed changes to existing project energy models to quantify overall impacts under a limited number of carefully selected scenarios.

We see the project being carried out in four main phases (with some iteration and overlap):

Initial Recommendations

Our early focus will be on developing well-supported technical recommendations, based on the following sources.

1) Previous modelling or research by our team members

- a. Project modelling or project experience – e.g. Evoke has available existing modelling comparing CWEC2016 and 2020 weather files from previous project work. We have experience with applications of the modeled floor area over various space types, application of the corridor pressurization adjustment, impacts of GHG reduction modelling compared with ASHRAE and NECB, and have ready access to a variety of energy models across a number of building types, including low- and high-rise MURBs, mixed-use buildings, offices, and others (e.g. schools, institutional buildings) both in the City of Vancouver and across the Lower Mainland (targeting Step Code and modeled based on the EMG v2.0).

As indicated in the RFP, recommendations for the refrigerant methodology will be based on existing available resources and reports, with consideration to other relevant standards or regulations. AME will also review and make recommendation on whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume or cooling capacity. AME has access to refrigerant information from a variety of projects and system types, and can refer to this information if required.

- b. Previous design guides – e.g. RDH developed UBC's Design for Climate Resilient Buildings document, as well as the Climate Resilience Framework and Standards for Public Sector Buildings, which they will draw on to develop strategies around overheating analysis, CEDI, and resilience. AME developed a ZEBx Playbook, "Ventilation Strategies for High-Performance Multi-Unit Residential Building", which will contribute background to discussions of both ventilation rate standard and corridor pressurization.
- c. A member of our team was on the CSA Z5020 committee, allowing us to draw readily on his existing knowledge of the standard.

2) Previous modelling or research by others

- a. Research by others will inform some recommendations, for example the DHW recommendations have been explored in depth previously. In these cases, we will focus on impact on overall TEUI, TEDI, and GHGI based on existing project examples and basic calculations. Our approach for appliances, laundry, lighting, and elevators will similarly draw on existing information, supplemented by our project experience of how these items impact model and design outcomes.
- b. To consider form factor recommendations, we intend to leverage Building Pathfinder to quantify impacts of VFAR; this will allow for a replicable and transparent factor development and allow fast comparison of a number of possible options.

Validation via Energy Modelling

Once we have developed preliminary recommendations and discussed our initial proposals and reasoning with the City, we will test the recommendations against the v3.0 guidelines using whole building energy modelling. Modelling will be done by Evoke using our existing project models. We anticipate using a wood-framed low-rise MURB (6 storeys), and a high-rise MURB, both of which are either in detailed design or past the building permit phase, and are located in the Lower Mainland and modeled to v2.0 of the EMG.

We anticipate developing several iterations of these models, in particular to analyze with and without mechanical cooling scenarios and compliance paths. Our main focus will be to analyze the overall combined impact of the recommended changes. We anticipate that the impacts of many of the proposed changes will be readily apparent and will not require separate analysis; e.g. the DHW changes will only impact DHW end use, which will be shown as an outcome of the modelling. Where impacts are both substantial and not immediately apparent, e.g. ventilation standards, we have allowed for a small number of dedicated iterations to isolate and illustrate individual impacts.

It is possible that certain of these isolated iterations may need to be done during the initial recommendation development; this is easy to do using the same models and methods and can be carried forward into this validation analysis.

We do not anticipate that there will be sufficiently broad changes to the non-residential modelling guidelines to require a re-modelling, however we do have access to existing office and retail building models and can readily run one or two basic items (e.g. a change to ventilation rates).

We expect that the biggest goal of the energy models will be to confirm, consolidate, and communicate impacts, which will be used during the consultations described below.

Consultation

We will lead two 1.5–2 hour virtual workshops, and will conduct an online survey.

Workshop 1 will be focussed on relevant code compliance professionals, while workshop 2 will focus on local energy modelling professionals.

We will work with the City to develop the invitation lists. The first workshop will be invitation only and will include stakeholders throughout the province. We anticipate that this will be a

smaller group (10-20 as noted in the RFP) and will allow for more open discussion time. We note that the upcoming version of the BC Energy Step Code will specifically reference v2.0 of the EMG, but that future versions may be adopted at some point and will certainly have an impact beyond Vancouver. We have not allowed for additional exploration of impacts outside of Vancouver but will provide the information and background we can based on our experience.

The second workshop will be open invitation and will be distributed to our and the City's networks. The RFP anticipates approximately 25-50 individuals. In this larger workshop, we anticipate a more structured and time-bounded format for feedback to allow for the larger group format.

A survey will be developed in time to be distributed during the workshops, with additional distribution within our and the City's networks. We anticipate that the survey will be primarily multiple choice, with limited open feedback options, to allow us to collect, analyze, and incorporate feedback within the project timelines.

Finalizing the Report and Guidelines

Once feedback from the draft report, workshops, and survey are collected, we will update and finalize our report and the EMG v3.0 with tracked changes.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

EVOKE BUILDINGS ENGINEERING INC.

Alex Blue, P.Eng., BEMP, LEED AP BD+C – Principal, Building Energy Specialist

Project Lead

s.22(3)(d)

Grace Suri, LEED AP BD+C – Building Energy Specialist

Building energy modelling, technical input

s.22(3)(d)

s.22(3)(d)

RDH BUILDING SCIENCE

Brittany Coughlin, M.A.Sc., P.Eng., BEMP, CPHC, LEED AP – Principal, Energy + Sustainability Specialist

RDH project lead, overheating, CEDI, and resilience focus

s.22(3)(d)

Eric Catania, M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C – Associate, Senior Energy and Sustainability Analyst

Technical input, expertise with numerous software types

s.22(3)(d)

s.22(3)(d)

Neil Norris, M.A.Sc., P.Eng., CPHD – Associate, Building Science Specialist
Technical input, CSA Z5020, survey development and analysis

s.22(3)(d)

The AME Consulting Group Ltd.

Marc Trudeau, P.Eng., Architect AIBC, BEMP, CPHD, LEED AP BD+C
AME project lead, refrigerant GHGI-R focus

s.22(3)(d)

Patrick Stewart, P.Eng. CPHD, LEED Green Assoc.
Mechanical design engineer, technical input

s.22(3)(d)

**REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE**

s.22(3)(d)

References	
Client Name # 1	Province of BC, Building and Safety Standards Branch, Ministry of Housing
Address (City and Country)	PO Box 9844 Stn Prov Govt Victoria, BC, Canada
Contact Name	Scott Williams
Title of Contact	Senior Codes Engineer
Telephone No.	236-478-2043
E-mail Address	Scott.B.Williams@gov.bc.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	
Client Name # 2	Jameson Development Corp
Address (City and Country)	670 – 1655 West Broadway Vancouver, BC
Contact Name	Tom Pappajohn
Title of Contact	VP
Telephone No.	Office: 604-732-7122
E-mail Address	tom@jamesoncorp.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

**REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE**

Client Name # 3	University of British Columbia Properties Trust
Address (City and Country)	Suite 200 – 3313 Shrum Lane Vancouver, British Columbia Canada V6S 0C8
Contact Name	Shawn Rodgers
Title of Contact	Development Manager
Telephone No.	C: 778-987-8965
E-mail Address	SRodgers@ubcproperties.com
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	
**Additional RDH Reference **	
Client Name # 4 - RDH Reference	University of British Columbia, Sustainability and Engineering, Campus and Community Planning
Address (City and Country)	Centre for Interactive Research on Sustainability, 2210 West Mall, Vancouver, BC V6T 1Z4
Contact Name	Ralph Wells
Title of Contact	Community Climate and Energy Manager
Telephone No.	(604) 827-1838
E-mail Address	ralph.wells@ubc.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

Subcontractors

List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).

RDH BUILDING SCIENCE

Scope subcontracted: Development of recommendations and reporting for overheating, resilience, CEDI, future climate weather files, and assist with review of CSA Z5020. Assist with workshops (led by Evoke) and lead survey development and analysis (with input from Evoke).

The AME Consulting Group Ltd.

Scope subcontracted: Development of recommendations and reporting for refrigerant impact, with input and coordination from Evoke. Provide brief input from a mechanical design perspective on compliance for actively cooled buildings. Be present for workshops to answer questions and be available to respond to input from City staff and consultation.

Declaration of Supplier Code of Conduct

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") <<https://policy.vancouver.ca/AF01401P1.pdf>>, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.

As an authorized signatory of Evoke Buildings Engineering Inc. (*vendor name*), I declare that I have reviewed the SCC and to the best of my knowledge, Evoke Buildings Engineering Inc. (*vendor name*) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of Evoke Buildings Engineering Inc. (*vendor name*). s.15(1), s.22(1)

Signature: _____

Name and Title: Alex Blue, Principal, Building Energy Specialist

Exceptions to Declaration: None.

REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

Conflicts, Collusion, Lobbying
See Article 9 of Appendix 2 for instructions.
Evoked Buildings Engineering Inc. confirms and warrants there is no Conflict of Interest / Collusion / Lobbying as per Article 9 of Appendix 2 of the RFP.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Est. Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:	75	
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved	150	
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI	100	
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.	112.5	
Totals (fees should include PST but exclude GST)			

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
Alex Blue	Principal, Project Lead	
Grace Suri	Building Energy Consultant	
Brittany Coughlin	Principal, Energy and Sustainability Specialist	
Eric Catania	Associate, Energy and Sustainability Specialist	
Neil Norris	Associate, Building Science Specialist	
Patrick Stewart	Principal, Mechanical Advisory Services	
Marc Trudeau	Principal, Mechanical Advisory Services	
Energy Engineer	Additional support	

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

<p>Majority owned/controlled/ by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Women <input type="checkbox"/> Indigenous Peoples <input type="checkbox"/> Non-Profit/Charity (Social Enterprise) <input type="checkbox"/> Coop <input type="checkbox"/> Community Contribution Corporation (3C/CCC) <input type="checkbox"/> Ethno-cultural Persons <input type="checkbox"/> People with Disabilities <input type="checkbox"/> LGBTQ+ <input type="checkbox"/> Other: please indicate 	<p>Workforce Diversity:</p> <p>60% Women</p> <p>% Indigenous Peoples</p> <p>% Ethno-cultural People</p> <p>% People with Disabilities</p> <p>% LGBTQ+</p> <p>% Other: please indicate</p>	<p>Social / Environmental Certifications</p> <ul style="list-style-type: none"> <input type="checkbox"/> BCorp <input type="checkbox"/> BuySocial <input type="checkbox"/> Supplier Diversity Certification <input type="checkbox"/> Fairtrade <input type="checkbox"/> Green Business Certification (ie. LEED, ClimateSmart) <input type="checkbox"/> Other: please indicate
--	--	--

s.22(1)

s.22(3)(d)

Alex Blue, P.Eng., BEMP, LEED AP BD+C
Principal, Building Energy Specialist

s.22(3)(d)

Alex Blue, P.Eng. BEMP, LEED AP BD+C
Principal, Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Alex Blue

(Print Name)

consent to the indirect collection from Evoke Buildings Engineering Inc.

(Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)

Signature

January 3, 2023

Date

s.22(1)

Grace Suri, LEED AP BD+C
Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

Grace Suri, LEED AP BD+C
Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

s.22(3)(d)

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Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Grace Suri

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s.15(1), s.22(1)

Signature

February 3, 2023
Date

s.22(1)

Brittany Coughlin | M.A.Sc., P.Eng., BEMP, CPHC, LEED® AP
Principal, Energy + Sustainability Specialist

s.22(3)(d)

s.22(3)(d)

s.22(3)(d)



s.22(3)(d)

Selected Publications

- Coughlin, Brittany, Christy Love, and Robert Lepage. "Passive House in Canada: Case Studies on a Near EnerPHit Retrofit and Post-Occupancy Research." Paper presented at 21st International Passive House Conference, Vienna, Austria, April 2017.
- Coughlin, Brittany. "Measured Performance: The Importance of Assessing Building Energy Consumption." *Construction Business Magazine*, 2015.
- Hanam, Brittany and Graham Finch. "Evaluating the Energy Savings of High-Performance Building Enclosure Retrofits." Paper presented at 14th Canadian Conference on Building Science and Technology, Toronto, ON, 2014.
- Hanam, Brittany, Al Jaugelis, and Graham Finch. "Energy Performance of Windows: Navigating North American and European Window Standards." Paper presented at 14th Canadian Conference on Building Science and Technology, Toronto, ON, 2014.
- Hanam, Brittany, Graham Finch, and Dave Ricketts. "Deep Energy Retrofits of High-Rise Multi-Unit Residential Buildings." Paper presented at ACEEE Summer Study on Energy Efficiency in Buildings, Pacific Grove, CA, 2014.
- Finch, Graham and Brittany Hanam. "Net Zero Building Enclosure Retrofits for Houses: An Analysis of Retrofit Strategies." Paper presented at ASHRAE Buildings XII, Clearwater Beach, FL, 2013.
- Hanam, Brittany, Graham Finch, and Susan Hayes. "Energy Ratings for Windows: Balancing Energy Consumption and Thermal Comfort." Paper presented at ASHRAE Buildings XII, Clearwater Beach, FL, 2013.
- Hanam, Brittany, Graham Finch, and Dave Ricketts. "Thermal Importance of Windows: The Focal Point for Building Enclosure Energy Savings." *Construction Canada*, 24-30, 2012.
- Hanam, Brittany, Graham Finch, and Curt Hepting. "Meter Calibrated Energy Simulation of High-Rise Residential Buildings: Lessons Learned." Paper presented at 13th Canadian Conference on Building Science and Technology, Winnipeg, MB, 2011.

Selected Presentations

- "Passive House in Canada: Case Studies on a Near EnerPHit Retrofit and Post-Occupancy Research." Presented at 21st International Passive House Conference, Vienna, Austria, April 2017.
- "Deep Energy Retrofits of High-Rise Multi-Unit Residential Buildings." Presented at ACEEE Summer Study on Energy Efficiency in Buildings, Pacific Grove, CA, August 2014.
- "Thermal Performance of Exterior Insulated Wall Assemblies: Why this is the new norm." Presented at RCI Western Canada Chapter Seminar: Walls and Roofs, Vancouver, BC, June 2014.
- "Deep Energy Retrofits of High-Rise Multi-Unit Residential Buildings." Presented at ASHRAE High Performance Buildings Conference, San Francisco, CA, April 2014.
- "Window Standards Compared: NFRC vs. ISO vs. PHI." Presented at Passive House North West (PHNW) 5 Conference, Portland, OR, March 2014.
- "Energy Ratings for Windows: Balancing Energy Consumption and Thermal Comfort." Presented at ASHRAE Buildings XII Conference, Clearwater Beach, FL, December 2013.
- "Window Standards Compared: NFRC vs. ISO vs. PHI." Presented at Passive House North 2013, Vancouver, BC, September 2013.
- "Energy Modeling of Existing Mid- and High-Rise Multi-Unit Residential Buildings To Predict Energy Savings of Building Enclosure Retrofits." Presented at ASHRAE Energy Modeling Conference: Tools for Designing High Performance Buildings, Atlanta, GA, October 2012.
- "Choosing Windows: Balancing U-Value, Solar Heat Gain, Comfort and Energy." Presented at the 2012 BC Building Enclosure Council Annual Conference and AGM, Vancouver, BC, September 2012.
- "Near Net Zero Building Enclosure Retrofits for Houses." Presented at the 2012 AIBC Annual Conference, Vancouver, BC, May 2012.

PERSONAL INFORMATION CONSENT FORM(S)

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PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Brittany Coughlin

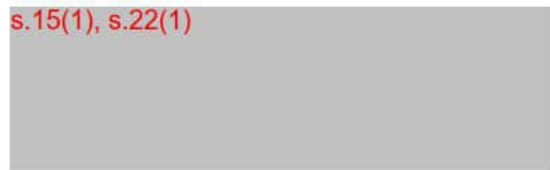
(Print Name)

consent to the indirect collection from RDH Building Science Inc _____

(Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)


February 3, 2023

Signature

Date

s.22(1)



Eric Catania

M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C,
PHI Accredited Passive House Certifier

**Associate, Senior Energy and Sustainability
Analyst**

s.22(3)(d)



s.22(3)(d)



Eric Catania

M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C,
PHI Accredited Building Certifier

**Associate, Senior Energy and Sustainability
Analyst**

s.22(3)(d)

s.22(3)(d)

Publications + Presentations

- Chidiac, SE, et al., "Computation tools for selecting energy conservation measures for retrofitting existing office buildings." Canadian Journal of Civil Engineering 40 (2013): 445-459.
- Chidiac, SE, Catania, EJC, Morofsky, E., Foo, S. "Effectiveness of single and multiple energy retrofit measures on the energy consumption of office buildings." Energy 36, no. 8 (2011): 5037-5052.
- Chidiac, SE, Catania EJC, Morofsky, E., Foo, S. "A screening methodology for implementing cost effective energy retrofit measures in Canadian office buildings." Energy and Buildings 43, no. 2-3 (2011):614-620.
- Catania, EJC, Chidiac, SE, Morofsky, E, Foo, S. "Comparative analysis of energy simulation programs, EnergyPlus and FEDS, using energy data from nine office buildings." Presented at



Eric Catania

M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C,
PHI Accredited Building Certifier

**Associate, Senior Energy and Sustainability
Analyst**

the 2nd Canadian Conference on Effective
Design of Structures, Hamilton, ON, 2008.

PERSONAL INFORMATION CONSENT FORM(S)

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PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Eric Catania

(Print Name)

consent to the indirect collection from RDH Building Science Inc _____

(Print Name of Proponent) of my
personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

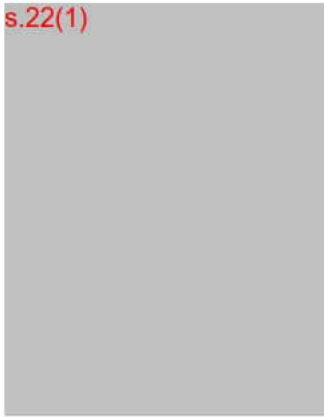
s.15(1), s.22(1)

February 3, 2023

Signature

Date

s.22(1)



Neil Norris | M.A.Sc., P.Eng., CPHD
Associate, Building Science Specialist

s.22(3)(d)



s.22(3)(d)



s.22(3)(d)



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PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Neil Norris

(Print Name)

consent to the indirect collection from RDH Building Science Inc _____

(Print Name of Proponent) of my
personal information in the form of a work history, resume or summary of qualifications.

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s.15(1), s.22(1)



Signature

February 3, 2023

Date

s.22(1)

Patrick Stewart

P.Eng., CPHD, LEED Green Assoc.

PRINCIPAL

Building Legacy at AME Group since 2011.

s.22(3)(d)

s.22(3)(d)



PERSONAL INFORMATION CONSENT FORM(S)

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PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, PATRICK STEWART
_____ (Print Name)

consent to the indirect collection from ALEX BLUE
_____ (Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

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s.15(1), s.22(1)

Signature

FEB 6 2023

Date

s.22(1)

Marc Trudeau

P.Eng., Architect AIBC, BEMP, CPHD, LEED AP
BD+C.

PRINCIPAL

Building Legacy at AME Group since 2019.

s.22(3)(d)

s.22(3)(d)



PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, _____

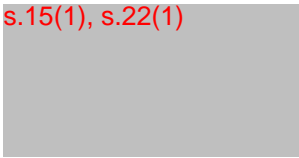
Marc Trudeau (Print Name)

consent to the indirect collection from _____

Evoke Buildings Engineering Inc (Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

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s.15(1), s.22(1)


February 2, 2023

Signature

Date

Executive Summary

Provide a brief executive summary of your Proposal.

We are pleased to provide a response to the City of Vancouver RFP No. PS20230002 for updating the Energy Modelling Guidelines v2.0 (CoV EMG) to v3.0.

Proposal Overview

Our proposed approach uses s.21(1) to address the project in an efficient and timely manner. Our methodology for the most significant step (#2) is s.21(1) for consistent feedback from and engagement with the City, reducing the need for a s.21(1)

This approach is outlined in greater detail in the next section of the proposal, which describes the proposed schedule, deliverables and suggested methodology for each update.

Why Focal

Focal's extensive use of these guidelines over the past 6 years means that our team is intimately familiar with them. We have previously suggested some update areas to the CoV and are pleased to see several mentioned in the RFP. Our experience is acknowledged by others. s.21(1)

Focal is experienced in guideline development. We co-developed the FortisBC Commercial New Construction energy modelling program and associated guidelines and have been providing technical reviews for that program since 2018 and administering it for over a year. The majority of these energy model submissions use the CoV EMG.

In addition, we believe that our extensive experience with codes and committees, including: the BC Energy Step Code, having participated on the technical sub-committee since before the code was enacted; the CSA Z5020 committee; the EGBC Professional Practice Guidelines reviews, and others, positions us well to provide these kinds of updates.

We would value the opportunity to contribute to updating these guidelines and helping move the industry forward.

Background

Focal Engineering Incorporated was established in 2015 in beautiful British Columbia. Headquartered in Victoria, we provide engineering consulting services to the building industry across Canada, with a focus on energy efficiency and sustainability for new and existing buildings. We are "energy engineers" with a whole-building approach and understand the relationship between building systems, their impact on energy performance and emissions, and the health and comfort of occupants. Our philosophy is to produce results that benefit our clients, our community, and the environment.

Focal Engineering is owned by Susan MacDougall and Riley Beise, who together have over 30 years of energy modelling and design experience. The two principals are supported by two seniors and a team of dedicated energy modellers and administrators.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Proposed Approach

Our team proposes the following approach which uses project phases and associated sub-tasks to address RFP scope items 1) through 15).

s.21(1)

s.21(1)

s.21(1)

s.21(1)

Deliverables

The major deliverables identified for this project include:

- Documentation
 - City of Vancouver Energy Modelling Guidelines v3.0
 - Methodology Report
- Meetings
 - Seven 1-hr, semi-monthly meetings with the City, plus kickoff and wrap up; all online
- Public Engagement
 - Two workshops
 - Online survey

These phases, tasks and associated deliverables are described in more detail in the Detailed Methodology section.

Analysis Approach

To avoid extensive use of modelling, per the RFP, we propose addressing these updates using analysis, tools, and references such as:

- s.21(1)
- s.21(1) where relevant

- s.21(1) of other published materials from reputable sources
 - [NRC's Climate Resilience Buildings: guideline for management of overheating risk in residential buildings](#)
 - [BC Housing's Overheating & IAQ Design Guide Supplement](#)
 - [BC Energy Step Code Metrics Report](#)
 - [Step Code Part 3 Analysis for Public Review](#)
 - [Step Code Public Sector Building Report v2](#)
 - [Fraser Health Authority's Establishing Design Conditions for Climate Resilient Planning and Design of Health Facilities in British Columbia](#)

s.21(1)

- City Data Set
 - Ideally, if a data set summarizing key attributes from ZEBP applications could be provided by the City, this would be a great supplement to any data provided by Focal.

Other Considerations

Our team realizes that updates to these guidelines could have implications to future versions of the British Columbia Building Code (BCBC) and will keep this in mind throughout the project. For example, the rest of BC includes climate zones different to Vancouver's, that may require separate considerations.

The RFP also requested considering constraints on common energy modelling software. This can be considered as part of the overall guideline update, and might fit naturally into the assessment of the EGBC/ AIBC PPG.

Detailed Methodology

Phase 1: s.21(1)

Our team will prepare for and attend the kickoff meeting. We anticipate this will be used to review scope, finalize the workplan, clarify assumptions, and coordinate other such project details. Suggested topics include:

s.21(1)

If the kickoff occurs in early February, we will begin subsequent tasks at an earlier date.

Phase Deliverables

- Kickoff meeting with the City of Vancouver (1-hr)

Phase 2: s.21(1)

s.21(1)



s.21(1)



s.21(1) . After receiving feedback from the City, we will update the draft guidelines and methodology sections for the end of April.

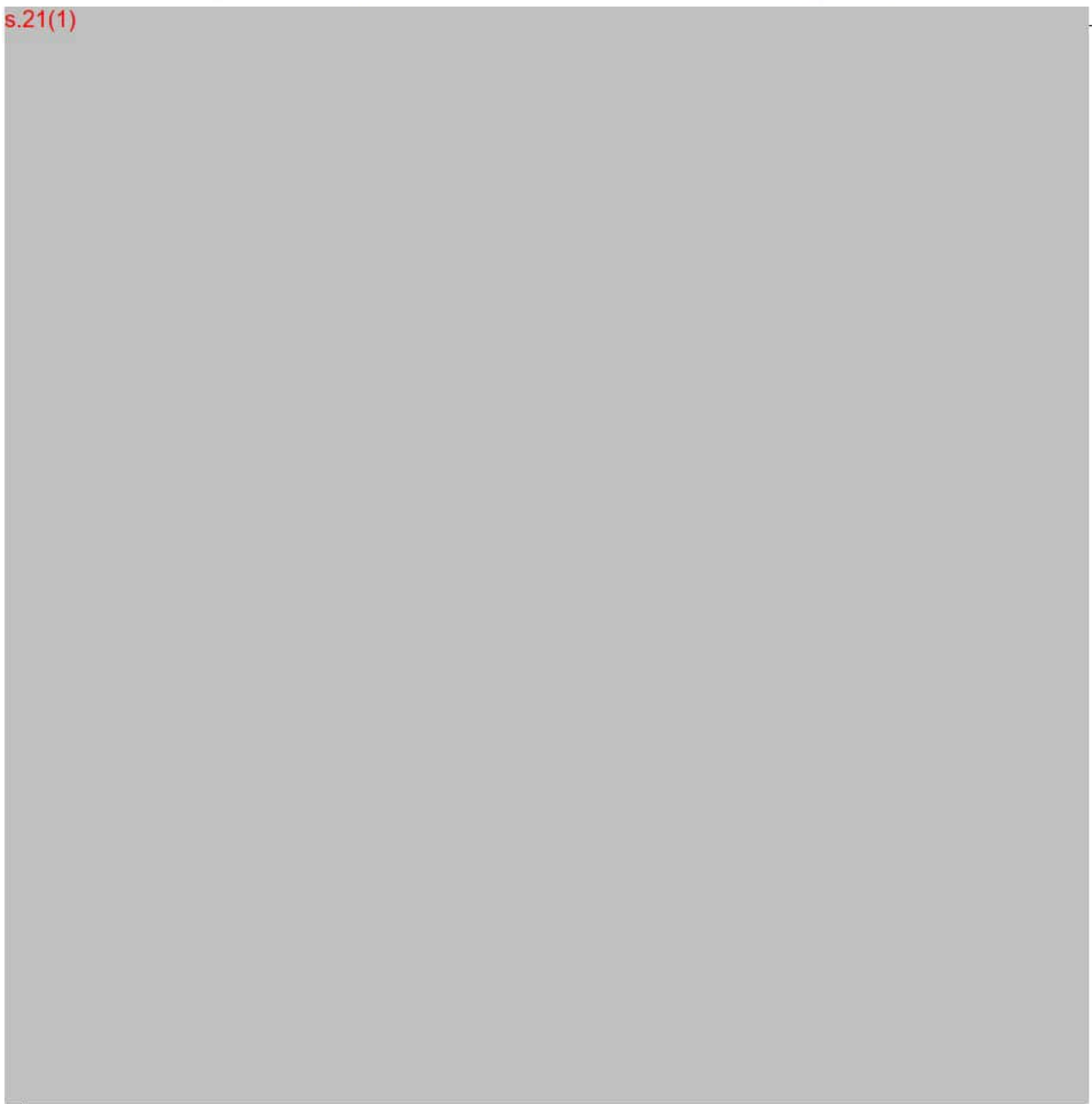
s.21(1)



s.21(1) . After receiving feedback from the City, we will update the draft guidelines and methodology sections for the end of April.

s.21(1)

s.21(1)



s.21(1) After receiving feedback from the City, we will update the draft guidelines and methodology sections for the next meeting.

Finalize Drafts (Meeting: end April)

We have built in a buffer to wrap up RFP scope items by the end of April, so the latter half of April is intended for Focal to finalize any updates to the draft guideline and methodology report based on feedback from the City. If all updates went smoothly, we will use the additional time to work on the Report Methodology and begin on the next task.

Task Deliverables

- Semi-monthly meetings (total of 4, 1-hr each)
- Draft guideline updates and report methodology for each meeting

s.21(1)

Based on the findings from Task 2, and feedback from the City, we will make any necessary updates to the Guidelines and associated Methodology Report.

Focal will issue a draft version of both documents to be used for the public engagement phase. This report will also detail the impacts of the proposed updates found in the aforementioned energy modelling comparison described by scope item 14) in the RFP.

In May we will also begin preparing the survey and setting up attendance for the workshops, which will be ready in June. Several of these coordination tasks will be handled by our administrative team, while the technical team finalizes the draft documentation.

Task Deliverables

- Semi-monthly meetings (total of 2, 1-hr each)
- Draft CoV EMG v3 for public engagement
- Draft Methodology Report for public engagement

Phase 3: Public Engagement (June)

Note: The survey will be prepared and workshop planning will begin in May (during the previous phase).

Task 1: Create and send out Survey

Focal will develop and make available an online survey to gather feedback, which will be accessible for the month of June. This survey will be open prior to the virtual workshops. We propose using a free tool such as Survey Monkey, or one provided by the City.

Task 2: Workshop 1

Focal will organize and facilitate a virtual workshop to share proposed changes to the Energy Modelling Guideline for code compliance professionals. We understand that this workshop will be invitation-based with approximately 10-20 attendees, last 1.5-2 hours, and scheduled for early June. We propose a short presentation for the workshop, to outline key updates to the guidelines, followed by time for discussion, Q&A and feedback from the participants.

Task 3: Workshop 2

Focal will organize and facilitate a second virtual workshop to share proposed changes to the Energy Modelling Guideline, open to any interested attendees. We understand that this workshop will also last 1.5-2 hours and will be scheduled for early June. We propose using the same presentation outlining key updates, followed by time for Q&A and participant feedback.

After both workshops are complete and the survey has been wrapped up, we will meet with the City to discuss the feedback and any potential updates.

Phase Deliverables

- Online Survey
- Two Workshops
- Meeting

Phase 4: Finalize Documents (July 10)

Based on the meeting with the City, Focal will produce a final electronic version of the proposed CoV EMG v3.0, with tracked changes. A clean version will also be available for distribution. A final copy of the Methodology Report will also be provided. Focal will attend a wrap-up meeting with the City to present the final deliverables, and complete the project.

Please note that while the final product has been requested by July 10th, if the survey closes at the end of June, more time may be requested to meet, then finalize the documents, depending on the level of updates required.

Phase Deliverables

- Final documents: CoV EMG v3.0 & Methodology Report
- Wrap-up meeting

Assumptions

Our proposal is based on the following assumptions:

- All meetings can be virtual and are generally 1hr or less.
- All information will be delivered to Focal in a timely manner.
- Where comparisons are requested; 2-3 sources of published information will be considered sufficient.
- Any documents that require purchasing will be provided by the City at no cost to the consultant.
- Because a budget was provided, we assume that a commensurate level of effort will be considered reasonable for addressing the RFP.

Project Experience

RFP Specific

A sample of Focal's modelled projects that meet the size requirements outlined in the RFP and use past versions of the CoV EMG are listed below. While most are within Climate Zone 4, we have also provided some that s.21(1)

7+ Storey MURB

s.21(1)

6-Storey MURB

s.21(1)

<6-Storey MURB

s.21(1)

Other Related Project Experience

Focal has modelled over 100 Step Code models using the CoV EMG. Examples outside the RFP archetypes are noted below, along with some of our industry leadership and technical committee experience. More information is available upon request.

Step Code Projects

s.21(1)

A large rectangular area of the document is redacted with a solid grey fill, covering the content under the 'Step Code Projects' heading.

Energy Modelling Industry Leadership

s.21(1)

A large rectangular area of the document is redacted with a solid grey fill, covering the content under the 'Energy Modelling Industry Leadership' heading.

Related Technical Committee Experience

In addition to our project experience, members of our team sit on several committees that are assisting in development of new energy and climate analyses parameters:

s.21(1)

A large rectangular area of the document is redacted with a solid grey fill, covering the content under the 'Related Technical Committee Experience' heading.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

Susan MacDougall

P.Eng., FEC, LEED AP BD+C, CPHC | Principal

s.22(3)(d)

Riley Beise

P.Eng., BEMP | Principal

s.22(3)(d)

Danny Taylor

CPHD | Associate

s.22(3)(d)

Kristian Storgard

E.I.T. | Energy Modeller

s.22(3)(d)

Jennifer Blagborne

Administrator

s.22(3)(d)

References	
Client Name # 1	Building and Safety Standards Branch (BSSB) Ministry of Housing
Address (City and Country)	Victoria, BC, Canada
Contact Name	Scott Williams
Title of Contact	Senior Codes Engineer
Telephone No.	236.478.2043
E-mail Address	Scott.B.Williams@gov.bc.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

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	s.22(3)(d)
Client Name # 2	BC Housing
Address (City and Country)	Vancouver, BC, Canada
Contact Name	Wilma Leung
Title of Contact	Senior Manager, Technical Research and Education
Telephone No.	778.452.6444
E-mail Address	wileung@bchousing.org
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	
Client Name # 3	Township of Langley
Address (City and Country)	Langley, BC Canada
Contact Name	Kevin Ramlu

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Title of Contact	Green Buildings Manager
Telephone No.	604.533.6119
E-mail Address	kramlu@tol.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

Subcontractors

List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).

None proposed

Declaration of Supplier Code of Conduct

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") < >, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.

As an authorized signatory of Focal Engineering (vendor name), I declare that I have reviewed the SCC and to the best of my knowledge, Focal Engineering (vendor name) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of Focal Engineering (vendor name).

Signature: s.15(1), s.22(1)

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Name and Title:	Susan MacDougall, Principal
Exceptions to Declaration:	
None	

Conflicts, Collusion, Lobbying
See Article 9 of Appendix 2 for instructions.
Declare no conflicts, collusion or lobbying per Article 9 of Appendix 2.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:	s.21(1)	
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
Susan MacDougall	Project lead, policy expertise	
Riley Beise	Energy modelling & EMG expertise	
Danny Taylor	Energy modelling	
Kristian Storgard	Energy modelling	
Jennifer Blagborne	Project management (coordination, workshop & survey)	

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

Majority owned/controlled/ by:	Workforce Diversity:	Social / Environmental Certifications
s.21 (1) Women (50%) Indigenous Peoples Non-Profit/Charity (Social Enterprise) Coop Community Contribution Corporation (3C/CCC) Ethno-cultural Persons People with Disabilities LGBTQ+ Other: please indicate	45% Women % Indigenous Peoples % Ethno-cultural People % People with Disabilities % LGBTQ+ % Other: please indicate	s.2 1(1) BCorp BuySocial Supplier Diversity Certification Fairtrade Green Business Certification (ie. LEED, ClimateSmart) s.21(1)



THERMAL MODELLING PROJECT DISCUSSION MEETING MINUTES

November 19, 2024

2:00 pm - 3:00 pm ET

In Attendance: Jonathan Layton, Charling Li

Staff: Isabelle Clewley, Terry Adamson, Adrian Edge

Vancouver Energy Modeling Guidelines Feedback Discussion

- Charling Li from the City of Vancouver discussed the Thermal Modelling Task Group's feedback on the energy modelling guidelines
- Spandrel panel performance calculation
 - Jonathan noted that the existing Fenestration BC reference procedure for simulating spandrel U-factors is outdated, as it assumes a 6-inch edge distance while the current NFRC standard is 10 inches
 - Recommended using the NFRC 100 standard instead, as it provides more accurate and up-to-date guidance
- Compliance options for products without NFRC/CSA certification
 - Challenges around the Energy Efficiency Act's requirement for NFRC or CSA certification, and how Method C in the guidelines was intended to provide an alternative path for custom or imported products without certification
 - Agreed this could create loopholes, and decided to focus on incentivizing manufacturers to get their products certified
- Applicability of the Energy Modeling Guidelines to Part 9 buildings
 - Charling clarified that the Energy Modeling Guidelines are primarily intended for Part 3 buildings, and would only apply to Part 9 buildings in rare cases of very large homes
 - The existing Part 9 compliance paths in the VBBL would remain the main options for most Part 9 projects
- Development of the online calculation tool
 - Jonathan provided an overview of the planned online tool being developed by Fenestration Canada, which will allow users to input project details and window specifications to automatically generate a compliance report
 - Aiming for it to be ready by mid-2025 to align with the new Energy Modeling Guidelines
- Retaining Method A as a compliance option
 - Debate about whether to retain Method A (using standard NFRC/CSA sizes) as a compliance option, even after the online tool is available
 - Potentially keep Method A for a transitional period before fully sunseting it
 - Sunset date coinciding when the tool is available



THERMAL MODELLING PROJECT MEETING MINUTES

August 24, 2023

1:00 pm - 2:30 pm EST

In Attendance: Adrian Edge, Murray Frank, Dave Goldsmith, Steve Urich, Jagdeep Singh, Jonathan Layton, Jeff Baker, Sophie Mercier, Amy Roberts, Amber Mengede, Brady Faught, Wei Keat, Stephen Kwan, Christopher, Edward Lau, Hugo Wong, Maura Gatensby

Staff: Isabelle Clewley, Terry Adamson, Al Jaugelis

ACTION ITEMS

WHO	WHAT	WHEN
Jonathan, Dave, Murray and Sophie	Form a group to work on refining the language and creating separate paths for Part 9 and Part 3 buildings	ASAP
Task group members	Review documents provided by Jeff Baker and distributed by Isabelle	ASAP

1. Antitrust

Isabelle Clewley read the antitrust statement.

2. Previous Meeting Minutes

To approve the previous meeting minutes

Motion: Dave Goldsmith

Second: Adrian Edge

Approved.

3. Review Revised Wording of Response to Brady Faught's Suggested Edits

- Use of different energy modelling software programs, particularly for cooling
- Inclusion of curtain wall calculations based on NFRC standards
- Challenges and differences in NFRC certification for commercial and residential products
- Develop new program that streamlines the certification process for commercial and residential products
- Frame materials and calculations for solar heat gain and U-values
- Publish the residential part of the program

4. Agree on Formal Response in Preparation for Next Meeting with COV Officials

- Review proposed language for the City of Vancouver energy modelling guidelines

- Thermal reporting standards and compliance paths for building projects
- NFRC CSA values
- European-rated products
- Passive house certification
- ASTM C 1199 testing
- Prescriptive methods in the building code
- Can municipalities opt out of using prescriptive methods?
 - Prescriptive methods can be used for buildings that fall outside of the step code

5. Review the Calculator by Jeff Baker

6. Discuss Application of Spreadsheet/Calculator to Record Actual Project Values

- Separate part 9 and part 3 of the project calculations and agreed to use Jeff Baker's calculator in conjunction with the City of Vancouver's specific project calculation spreadsheet
- Inclusion of structural components in the calculations and the importance of accurately modelling windows with different sizes and reinforcement
- Current spreadsheet being referred to does not exist and we need to align the calculations with NFRC
- Must include structural components in the model sizes under NFRC
 - Should the language be more specific?
 - Maybe write guidance paper
 - Address the issue of mullions in composite window designs and the potential impact on thermal performance
 - Exclusion of structural mullion components in NFRC and CSA calculations
- NFRC procedures
- Specificity, exclusion of structural components in calculations
- Brady Faught: for structural mullions in composite windows outside of NFRC ratings can be excluded from the calculations
- Research the impact of mullions on thermal performance, especially in the context of using combustible windows in taller buildings
- Thermal bridging in windows
 - Guidelines on how to address condensation and its impact on thermal performance
- Condensation to be considered
- New Federal interest in Fire Resiliency
- Certified professionals must conduct thermal analysis
 - Accurate documentation in reports
- Mixing certified and uncertified products in thermal analysis
- Timeline for updating guidelines
- Align calculations with NFRC.
- ACTION: Review documents, provide feedback on documents provided by Jeff Baker and distributed by Isabelle

7. Defining Industry Goals in regards to Thermal Evaluation of/for the following:

a) Part 9 (Residential)

b) Part 3 (Commercial)

c) European/Passive House certified products d) NFRC/CSA backing of initiatives

e) Education of industry stakeholders Proposed language revisions to the BC Code and Energy Modelling Guidelines to address discrepancies and clarify alternate paths for energy modellers

- Dave shared his screen, explained that the online information and ministerial order introduced the zero carbon step code and a prescriptive option for step 3 part 9 buildings, but only if a local

government passes an enabling bylaw

- These requirements are specific to part 9 buildings, not part 3
- Clarify and separate the energy modelling guidelines for Part 9 and Part 3 buildings due to their different methodologies, requirements, and regulations
- Options and clear paths for both types of buildings will avoid confusion and ensure compliance
- Clarify language and requirements in both Part 9 and Part 3 buildings
 - ACTION: Jonathan, Dave, Murray and Sophie to form a group to work on refining the language and creating separate paths for Part 9 and Part 3 buildings

6. Next Call

- To be scheduled Thursday, September 21 at 1:00 pm EST / 10:00 am PST



EVALUATOR'S GUIDELINES AND SCORING MANUAL

REQUEST FOR PROPOPAL PS20230002

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

February 7, 2023

Dino Goundouvas
Supply Chain Management

1. Introduction

Thank you for your participation in the evaluation of this request for proposals (RFP).

These guidelines are provided to:

- 1) assist you with your evaluation
- 2) maintain consistency amongst evaluation team members in the determination of a successful proponent
- 3) ensure that there is no conflict of interest in your participation in this evaluation. In accordance with the policies prescribed by the City of Vancouver.

Proponents spend a significant amount of time and resources preparing and supporting the offers they submit to provide products and professional and technical services to the City. The City benefits from this investment since it contributes both quality and choice to the City's strategic plans. In return for this effort, proponents are entitled to a full and fair evaluation.

This document is designed to assist evaluators in their evaluation of proponents' submissions and to help ensure the establishment of a clear record for the rationale used in assigning scores against the stated evaluation criteria. The City must be prepared to provide all proponents with feedback on a criterion-by-criterion basis and be able to support the reasons for the scores assigned by the evaluation committee.

2. Conflict of Interest

Any member of the evaluation committee who feels that they are, or may be, in a conflict of interest must declare this fact to the RFP Facilitator. If a potential conflict is disclosed, the RFP Facilitator will need to decide whether the member will be permitted to remain as an Evaluator. The Standards of Conduct for Public Service Employees Engaged in Government Procurement Processes provide a number of examples of conflict of interest. A conflict could exist if the individual:

- (i) has a friendship or familiar relationship with one of the proponents; or
- (ii) works for a company that is submitting a response; or
- (iii) has a strong bias for, or against, one of the proponents; or
- (iv) has a significant interest in a company submitting a response; or
- (v) has a direct or indirect financial interest in a proponent's business; or
- (vi) has an immediate family member who has input into a proponent's proposal; or
- (vii) has assisted in the preparation of a proposal; or
- (viii) has received a gift from one of the proponents.

All Evaluators are required to sign Non-disclosure and Conflict of Interest declaration forms which state the terms and conditions of conduct for the evaluation process. **Please**

be aware that all documents are subject to disclosure under the Freedom of Information and Protection of Privacy Act of British Columbia.

3. General

During the evaluation process, it is important to treat all proponents fairly and equally, and to evaluate their bids in accordance with the process described in the RFP. Care must be taken throughout the process not to take any actions or make any decisions that could be construed as providing an unfair advantage to any proponent.

Therefore:

- Each evaluator must act independently and be free from bias and conflict of interest, act objectively and consider only the information received via the RFP process. This means that the scoring must be based strictly on the merits of the proposal.
- It is each evaluator's responsibility to ensure all documentation related to the evaluation process is kept secure at all times;
- Evaluators are not to discuss the evaluation, scores or any issues of the RFP with any of the proponents or vendors;
- Evaluators should avoid discussing any aspect of the evaluation or share any information submitted, including submissions or other related documents with anyone INCLUDING other members of the evaluation committee (unless this discussion is being facilitated by the RFP Facilitator); and
- All questions should be directed to the RFP Facilitator.

4. Evaluation Procedure

Prior to reading or scoring the Proposals, the evaluator should read the RFP document, Questions and Answers, and any amendments or addenda. Copies of these documents will be provided by the RFP Facilitator.

- a. Accompanying this evaluation guidelines document is the RFP Evaluation Form for each proposal. The evaluator is required to write his/her name on each RFP Evaluation Form.
- b. Proposals must be evaluated on their individual merits against the evaluation criteria stated in the RFP PS20230002 and awarded scores using the scoring guidelines provided.
- c. Scores must not be awarded by comparing proposals against each other.
- d. Only information enclosed in the proposals may be used during the evaluation process. Information about or knowledge of the proponents that are external to the proposals must not be used in the assessment of proposals.
- e. On the RFP Evaluation Form, the scoring scale (0 to 5) is located at the bottom of each page and explained in more detail in the following Section 5. Each evaluator is to enter, in his/her opinion, the most applicable level as judged in meeting the requirement, and provide a brief explanation substantiating the score. For example, is there anything lacking or outstanding in the Proponent's response. Also, comments should be provided if an item receives a score of 0, 1, 4, or 5.

- f. At the end of the scoring section, a general comments section has been provided where the evaluator has an opportunity to provide further comments with respect to the proposal. *These comments are important for debriefing unsuccessful proponents.*
- g. Each category has been assigned a weighting value. The combination of the weights and all scores will be calculated to determine the highest rated proponent(s). This may provide the basis for determining a short-list of proponents or a successful proponent, if any, after all factors have been considered.
- h. When evaluating the proposals, the following procedure is recommended:
 - (i) Read the proposal in its entirety before making any notes or assessing any scores. This will provide you with an overview of what is being proposed.
 - (ii) Go to the sections in the proposal you have been asked to evaluate, and read through the entire section(s). Make notes where applicable.
 - (iii) Read the section again, assess and provide a score for each criterion and include brief comments that substantiate your decision. The comments may be referred to in any post assessment evaluators meeting; they are also beneficial for preparing any debriefing reports or meetings.
- i. When all proposals have been evaluated, check to ensure that all items have been addressed and that there are no omissions. Return the RFP Evaluation Form to SCM to compile and summarize the scores.

5. Evaluation Assessment Guidelines

Note: In the absence of any additional instructions provided by SCM to the team, please consider the following as the guideline for assessment.

Following are the assessment guidelines for scoring the proposals:

- 0 = Unsatisfactory:** The proposal is unsatisfactory, with the proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor:** The proponent barely satisfies the criteria. Significant risk may exist if proceeding with the proponent, requiring significant effort to develop a satisfactory performance level.
- 2 = Average:** The proponent is able to satisfy the criteria but further information is required to substantiate the proponent's claims of compliance with the particular requirement.
- 3 = Good:** The proponent has demonstrated that the requirement has been clearly satisfied and a sound understanding of the particular requirement, substantiated by detailed explanation and other supportive evidence. Related experience may be limited in some areas.
- 4 = Very Good:** The proponent has clearly demonstrated that the requirement has been satisfied, substantiated by a strong level of related

experience and in providing a significant level of beneficial insight and knowledge in the proposed solution.

5 = Excellent: The proponent has clearly demonstrated that they exceed the requirements by proposing an exceptional solution, substantiated with a strong level of understanding of the City's requirements plus related experience, resources, knowledge, skills and references.

All criteria will be assessed using the scoring guidelines outlined above.

The score for 'Price' will be determined by SCM using a formula outlined below whereby the lowest price for the complete package requested gets the full points available and the other pricing proposals are rated in relation to the lowest price.

The following formula will be used:

$$S = ((Lp / P) * W) * 100 \text{ where:}$$

S = Weighted percentage score
 Lp = Lowest priced bid
 P = Price
 W = percentage weight

These calculations will be done by SCM and will be shared with the evaluation committee at the evaluation meeting once the management; technical and financial scoring has been completed.

6. Evaluation Responsibilities

Category	Supply Chain Management	Evaluation Team
Terms and conditions, and high level mandatory requirements	X	
RFP administrative compliance	X	
Proponent information, references	With direction from Evaluation Team	X (references)
Business requirements		X
Other: Value-added services		X
Pricing/cost	X	
Sustainability	X	

Date:	2023-02-10
Employee Name:	Patrick Enright
Project No.:	PS20230002
Project Title:	CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

Please sign below after completing the following:

1. I understand my role in ensuring that I do not discuss or disclose any information while evaluating this proposal. <i>(See item 3 under General on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. I understand my role in ensuring that a conflict of interest does not occur. <i>(See item 2 under Conflict of Interest on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
3. I believe that I might have a conflict of interest.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

If Yes has been chosen for Item 3, please explain reason for potential conflict of interest. I have a relationship with:

Company Name: _____

Name: _____ Relationship: _____

Details: _____

s.15(1), s.22(1)

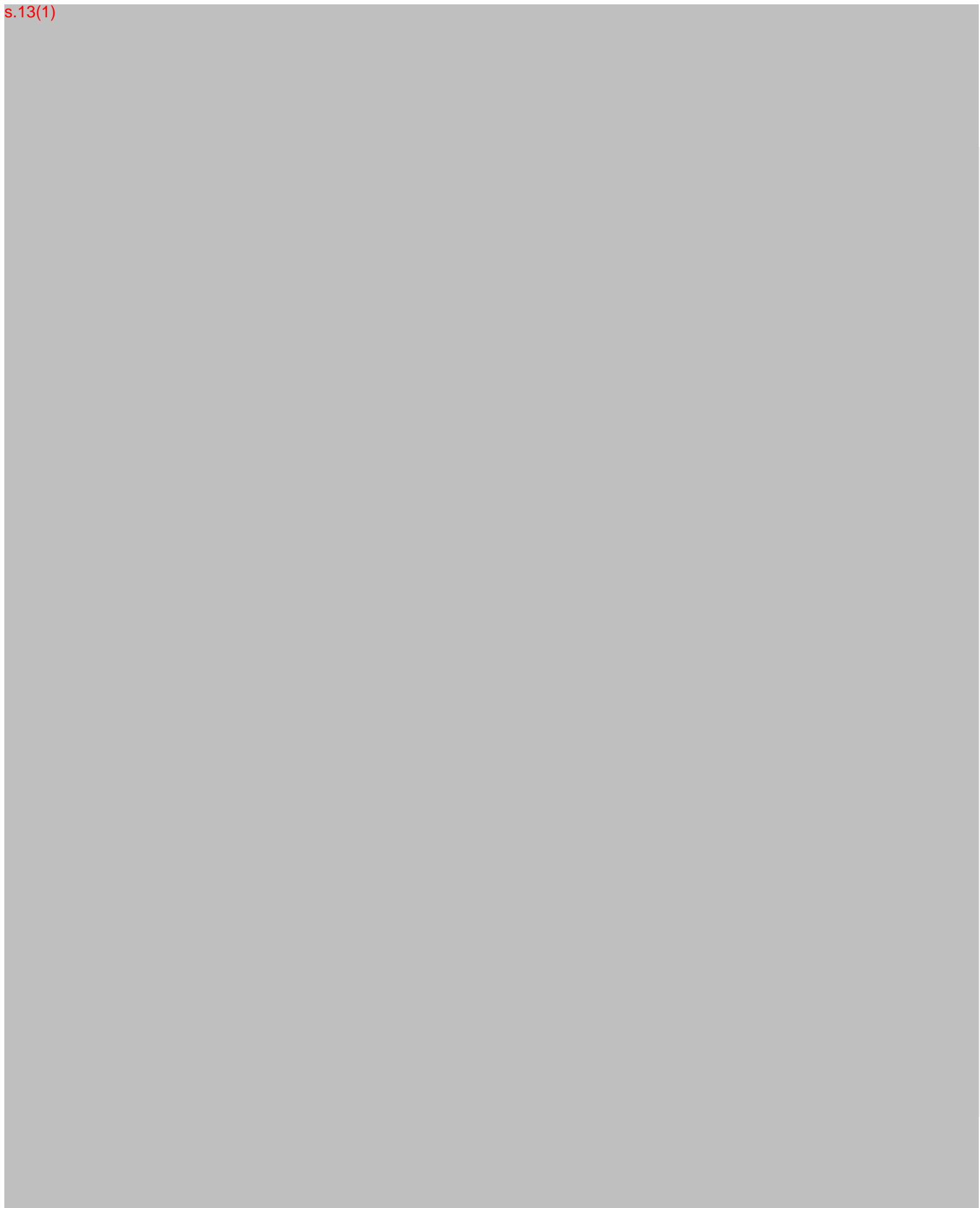
Employee's signature

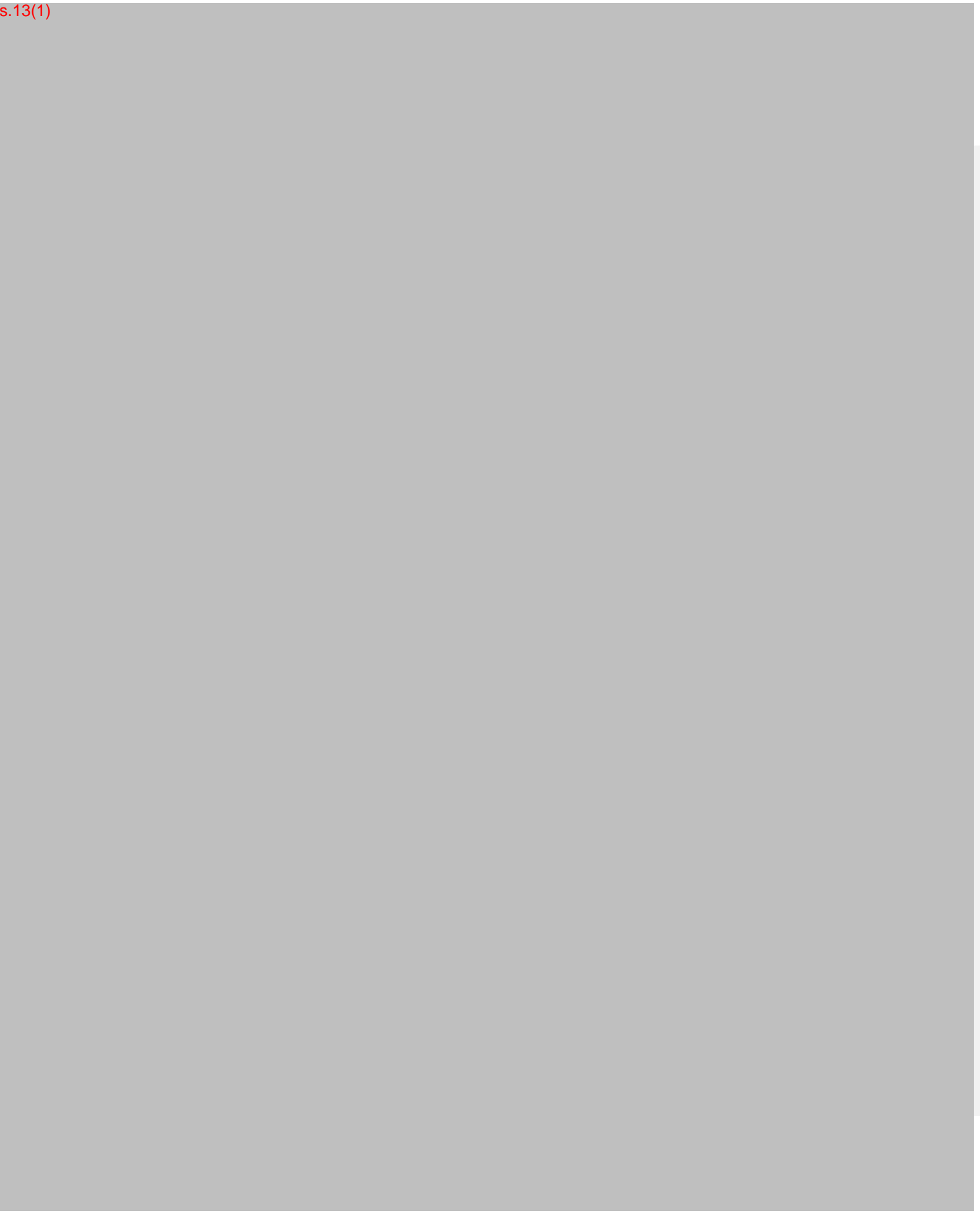
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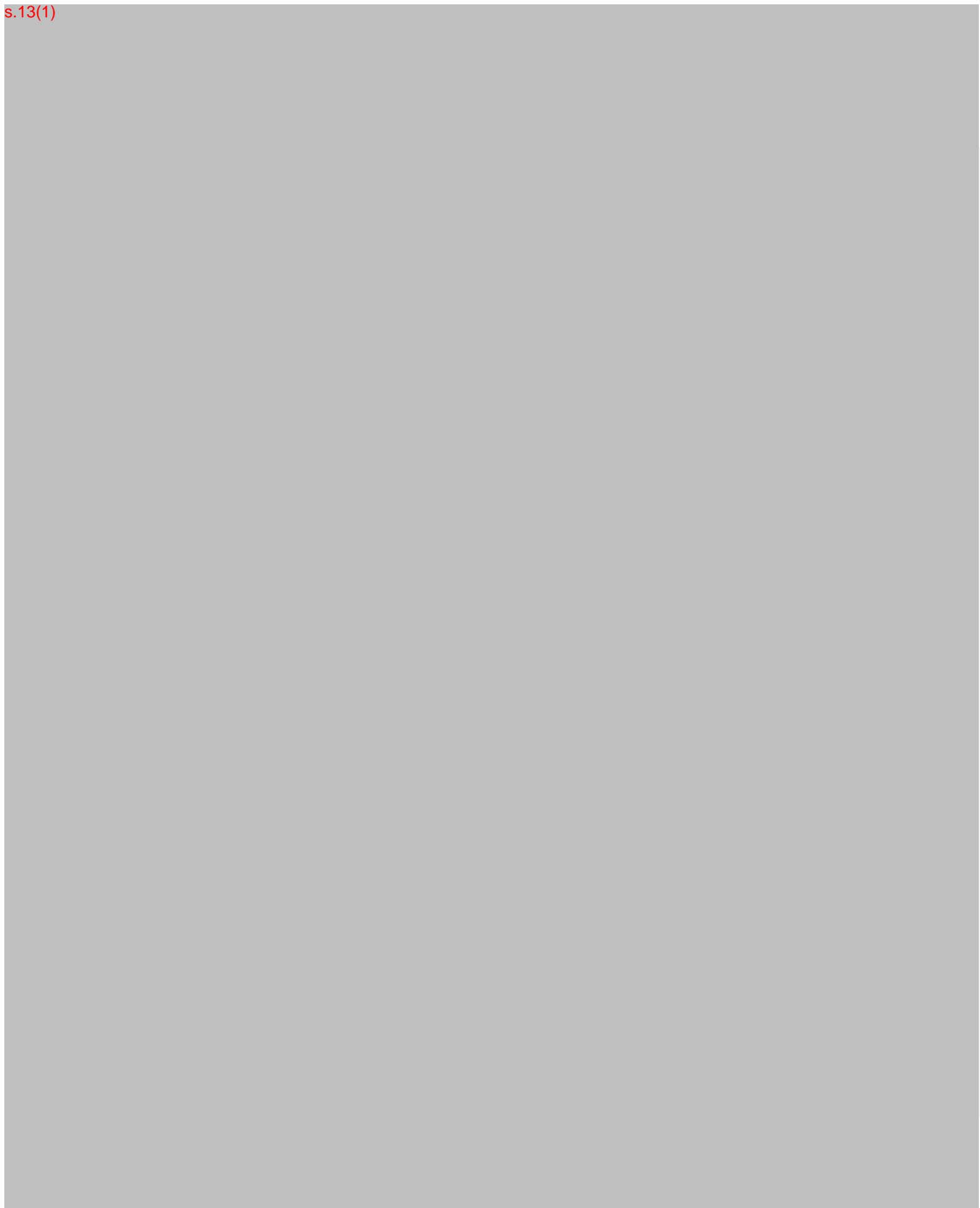
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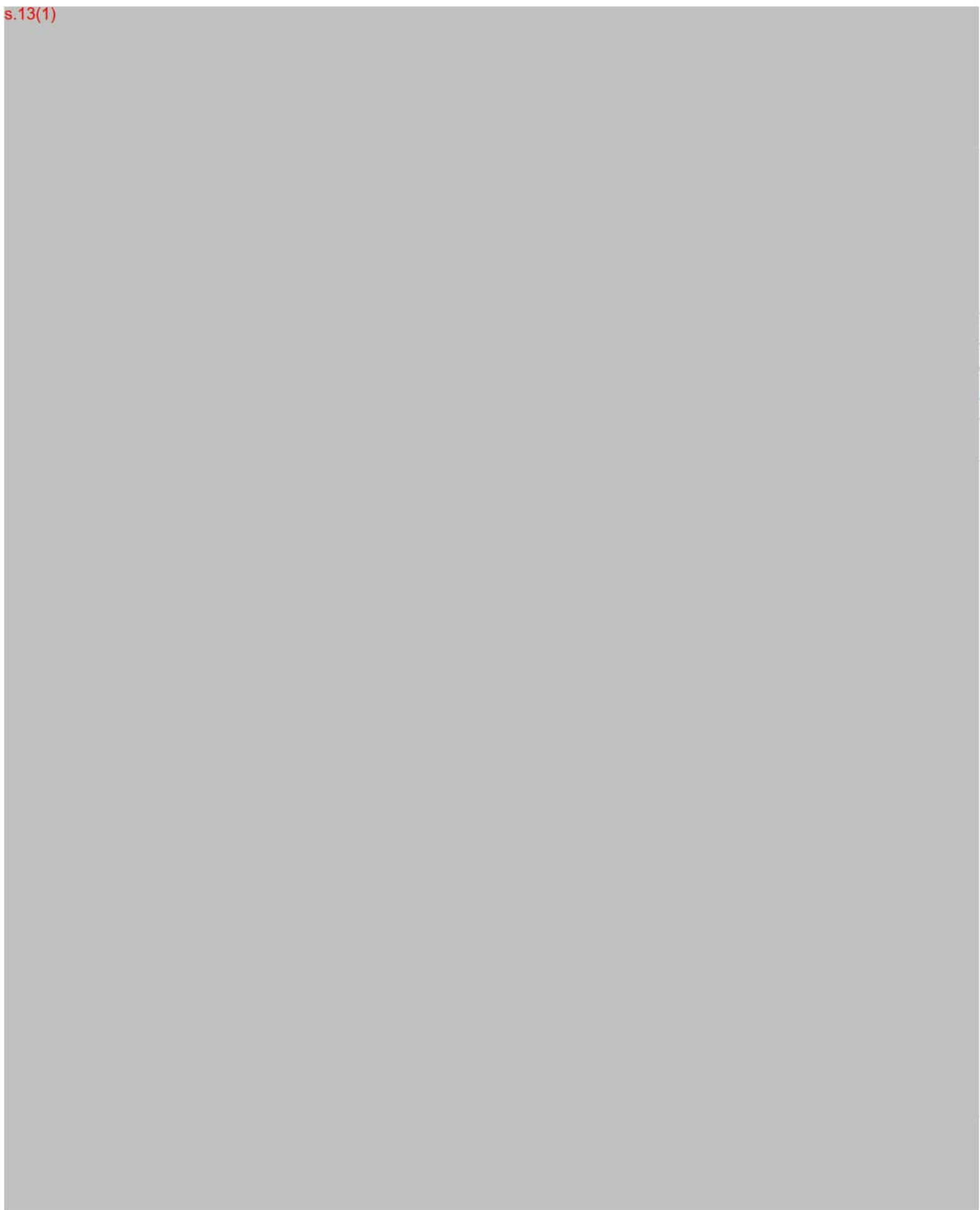
Patrick Enright

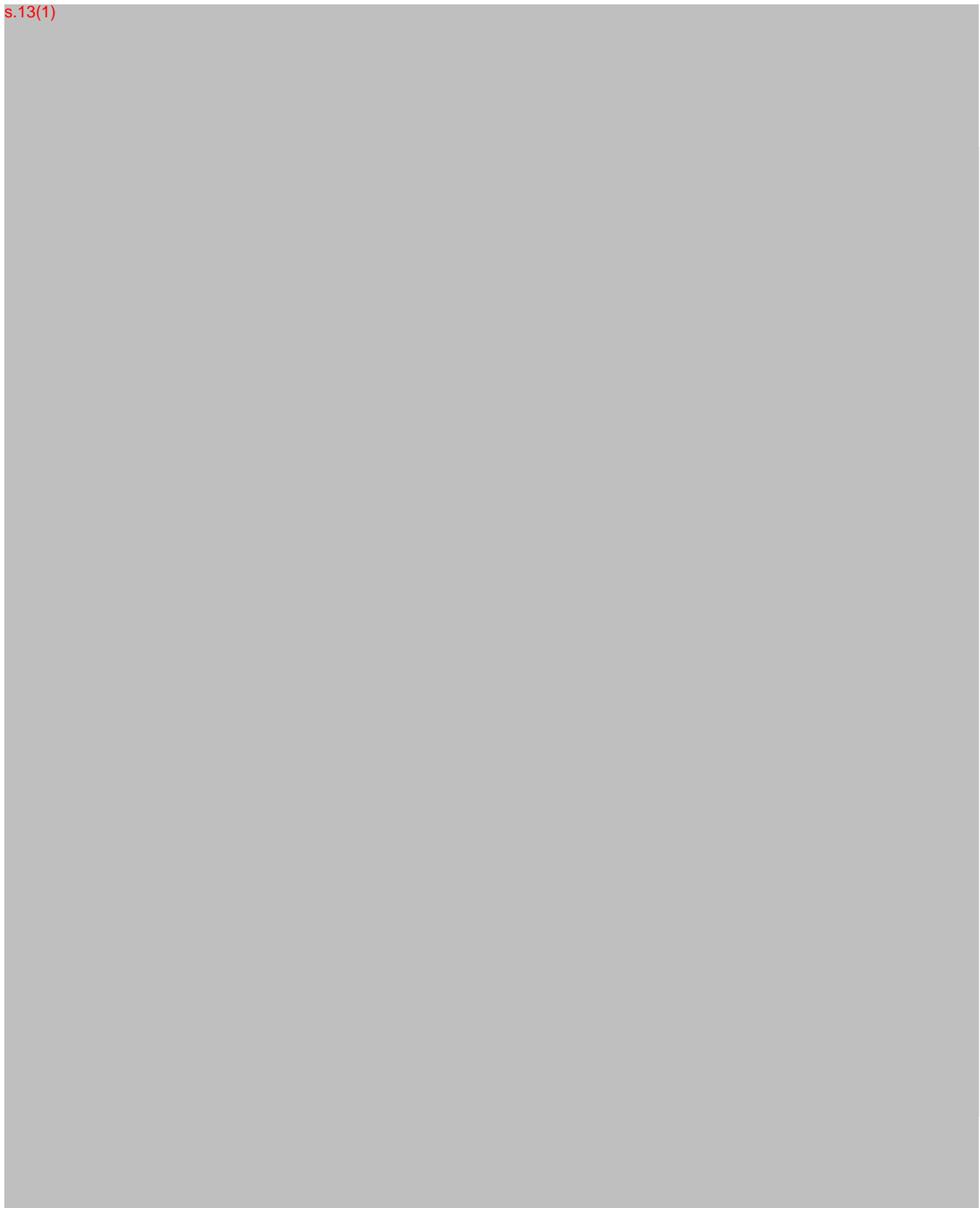
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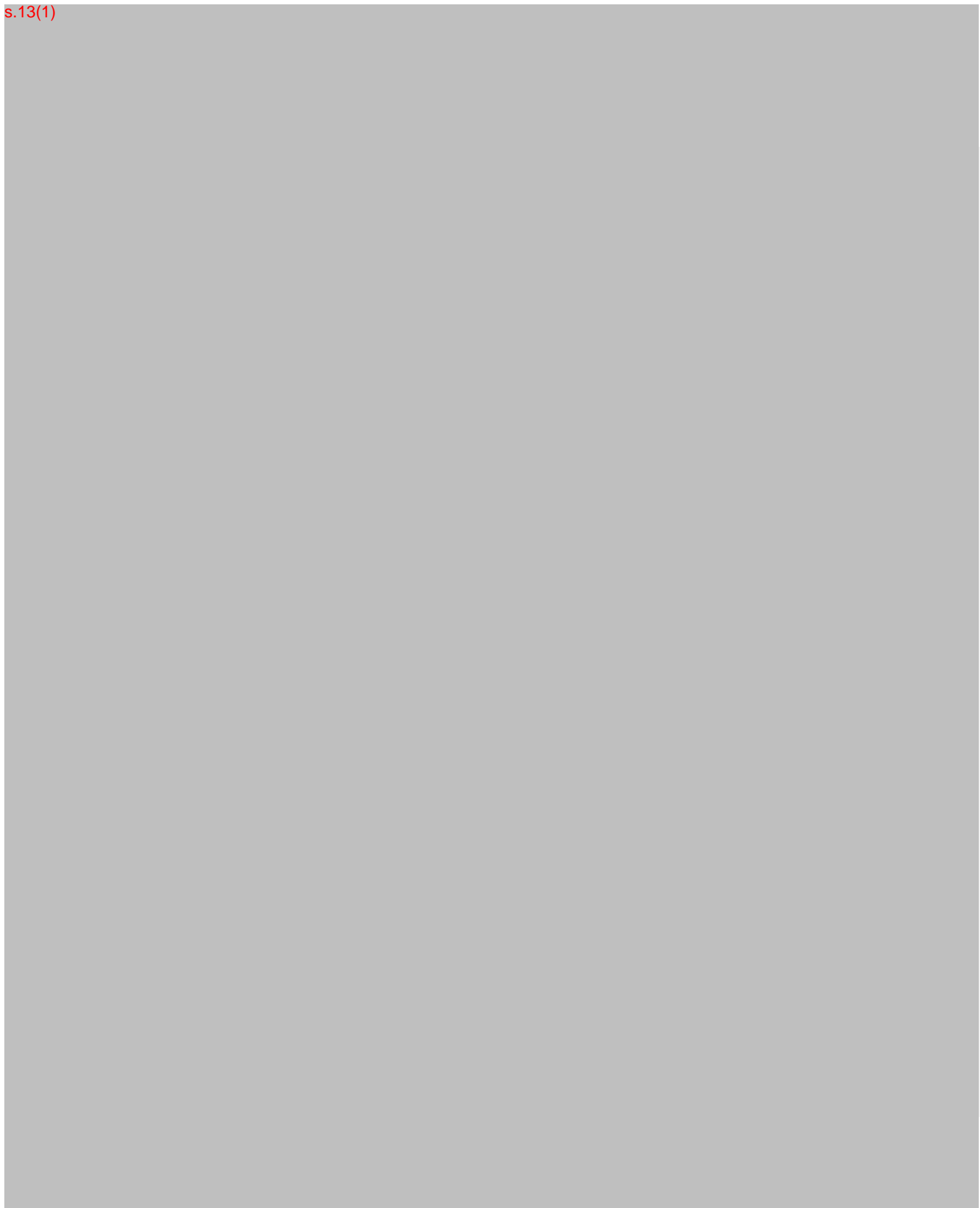


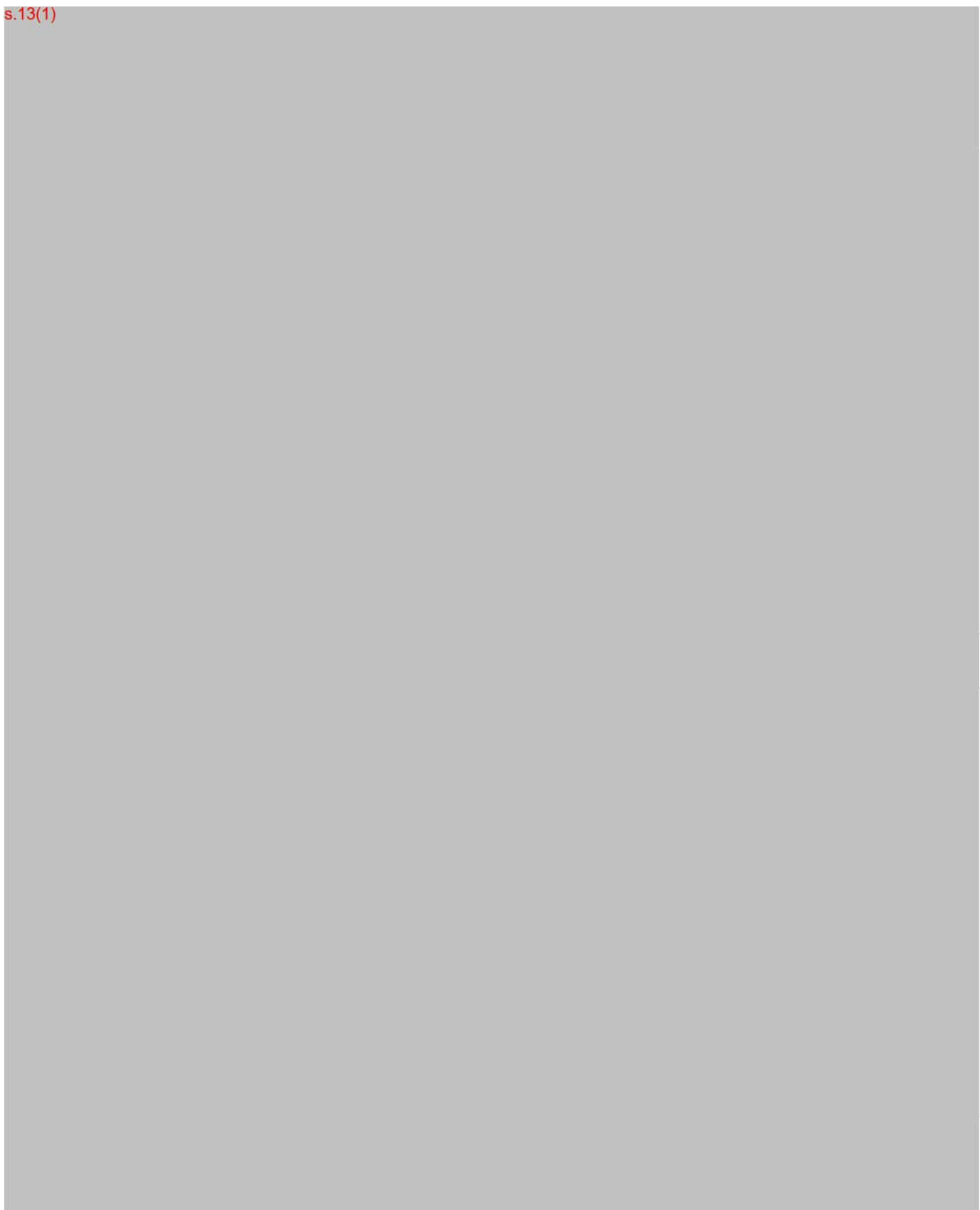


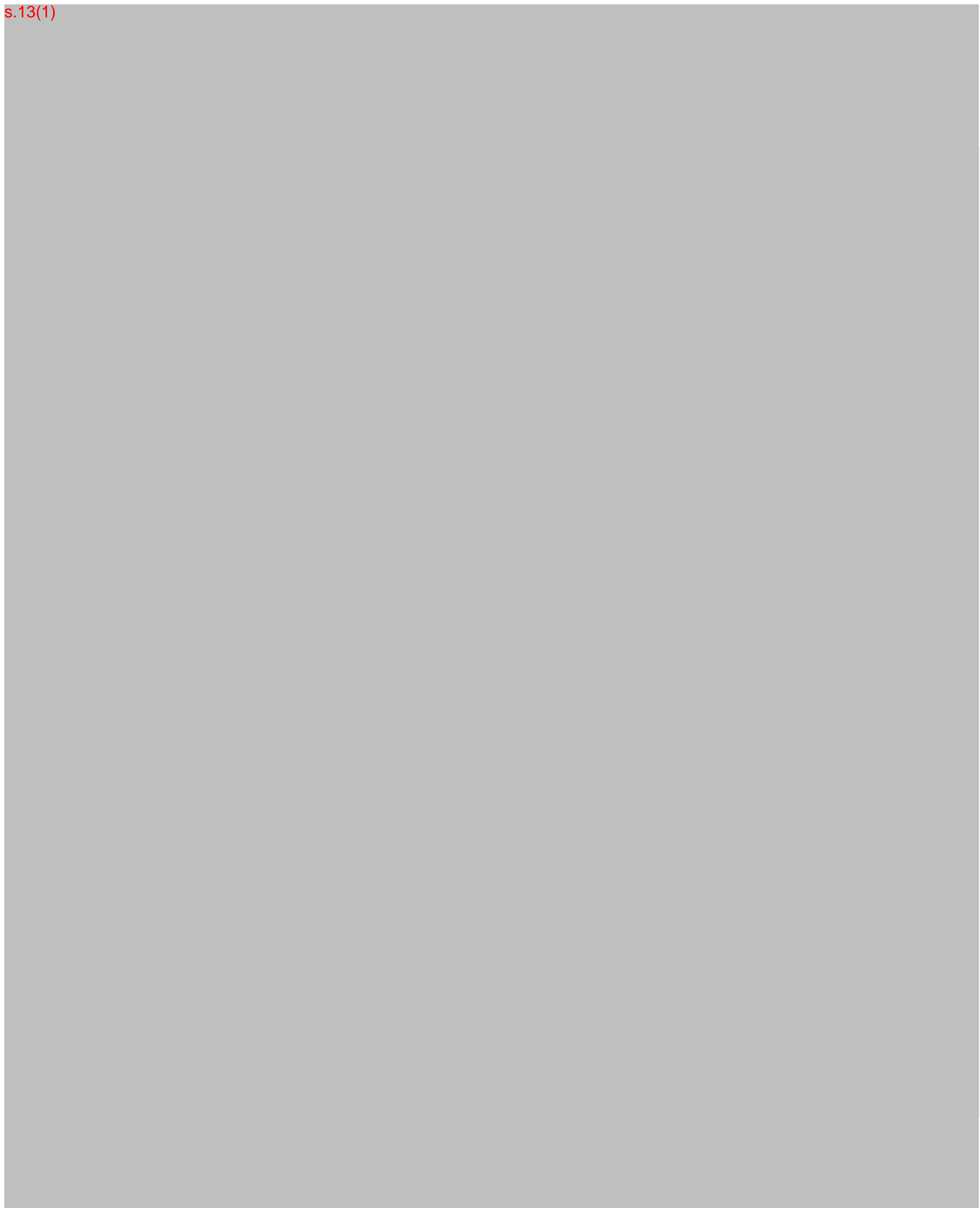


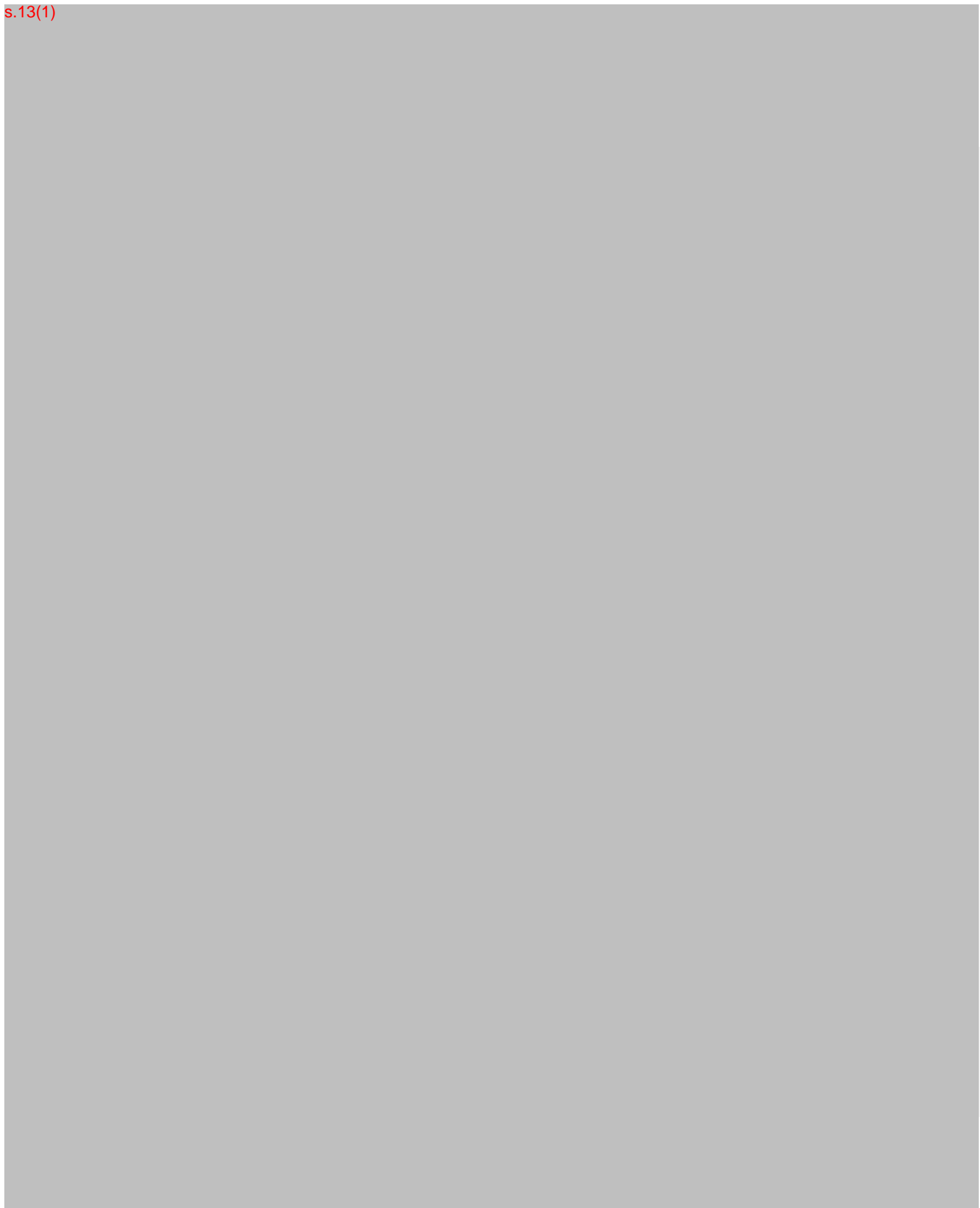


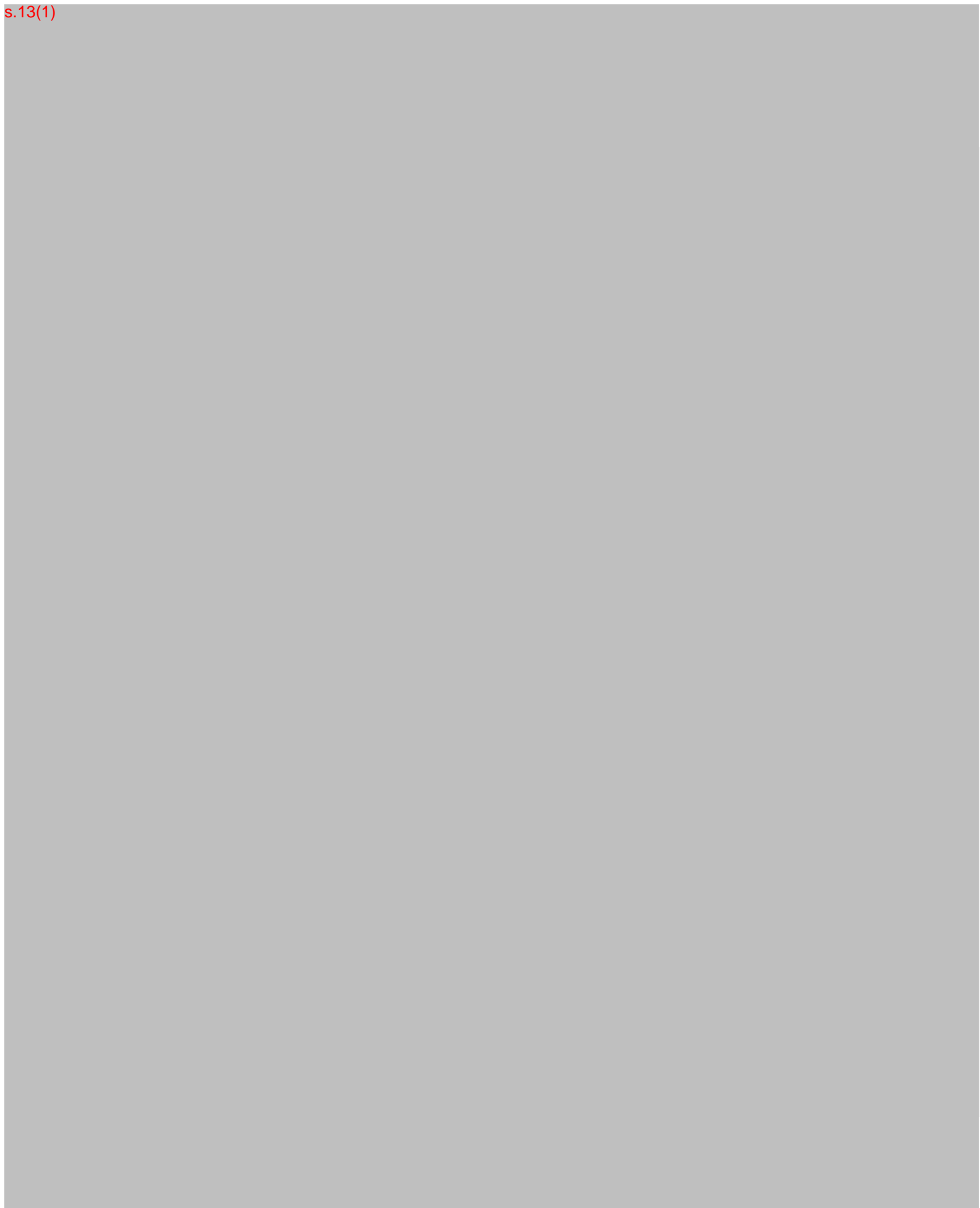


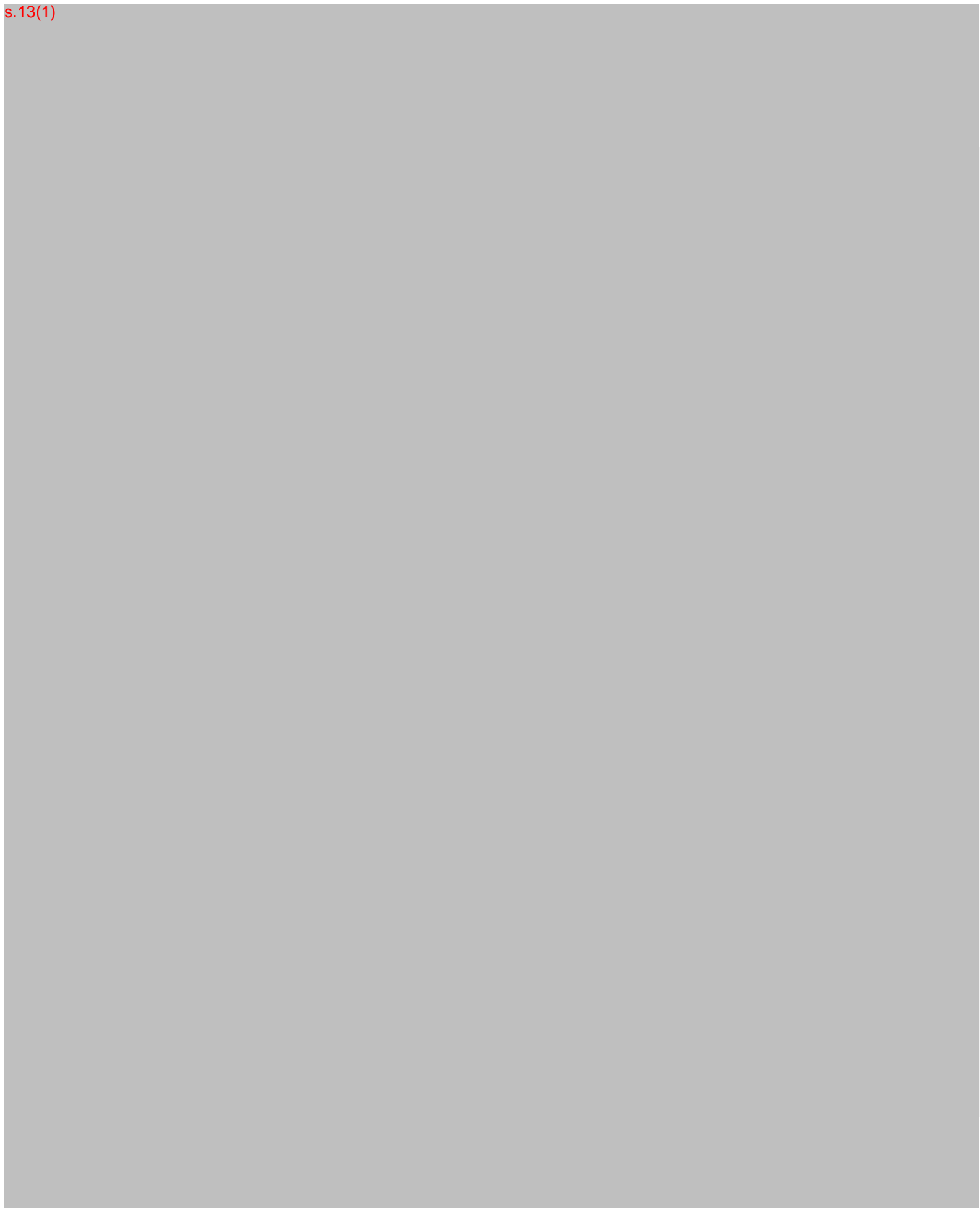


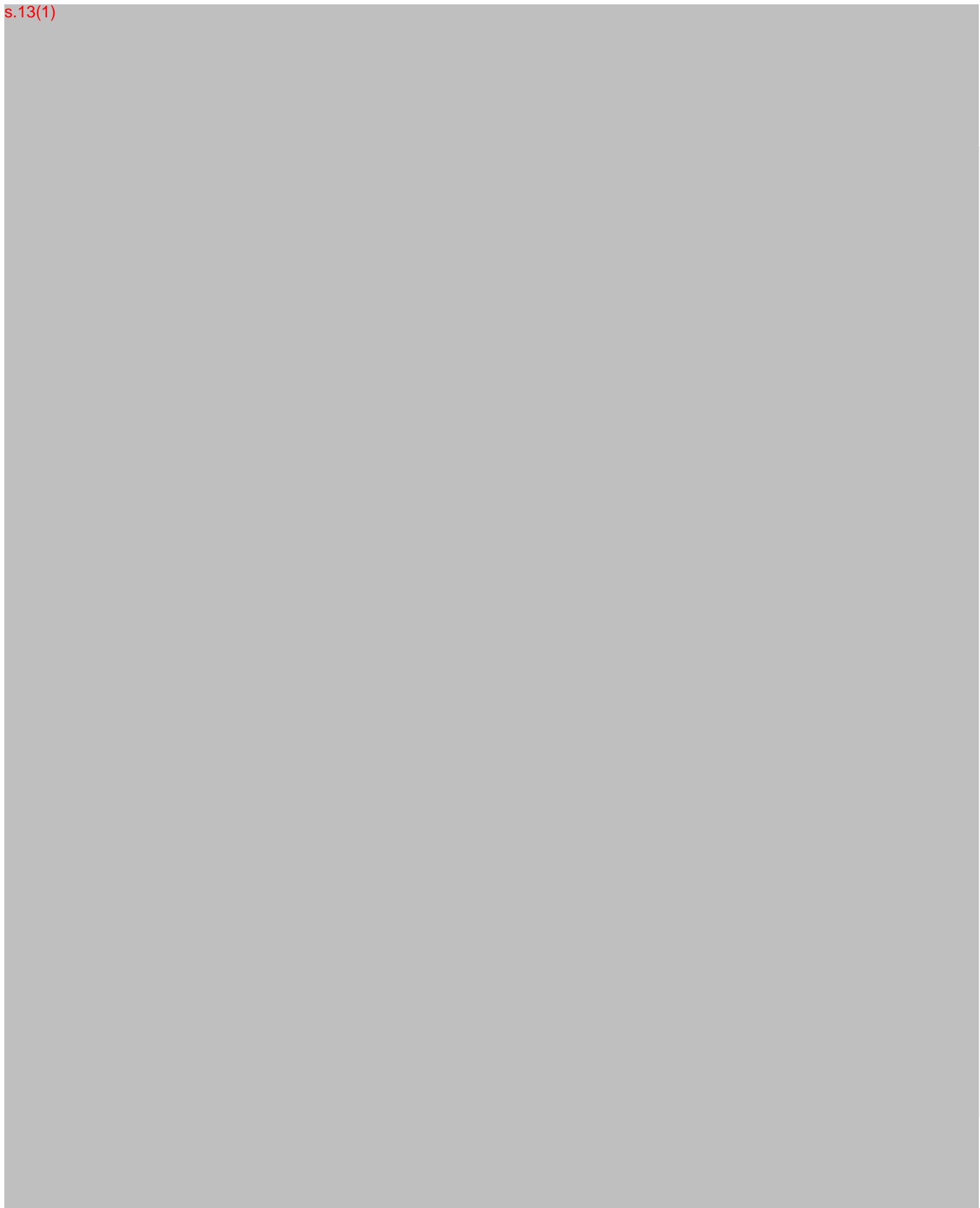


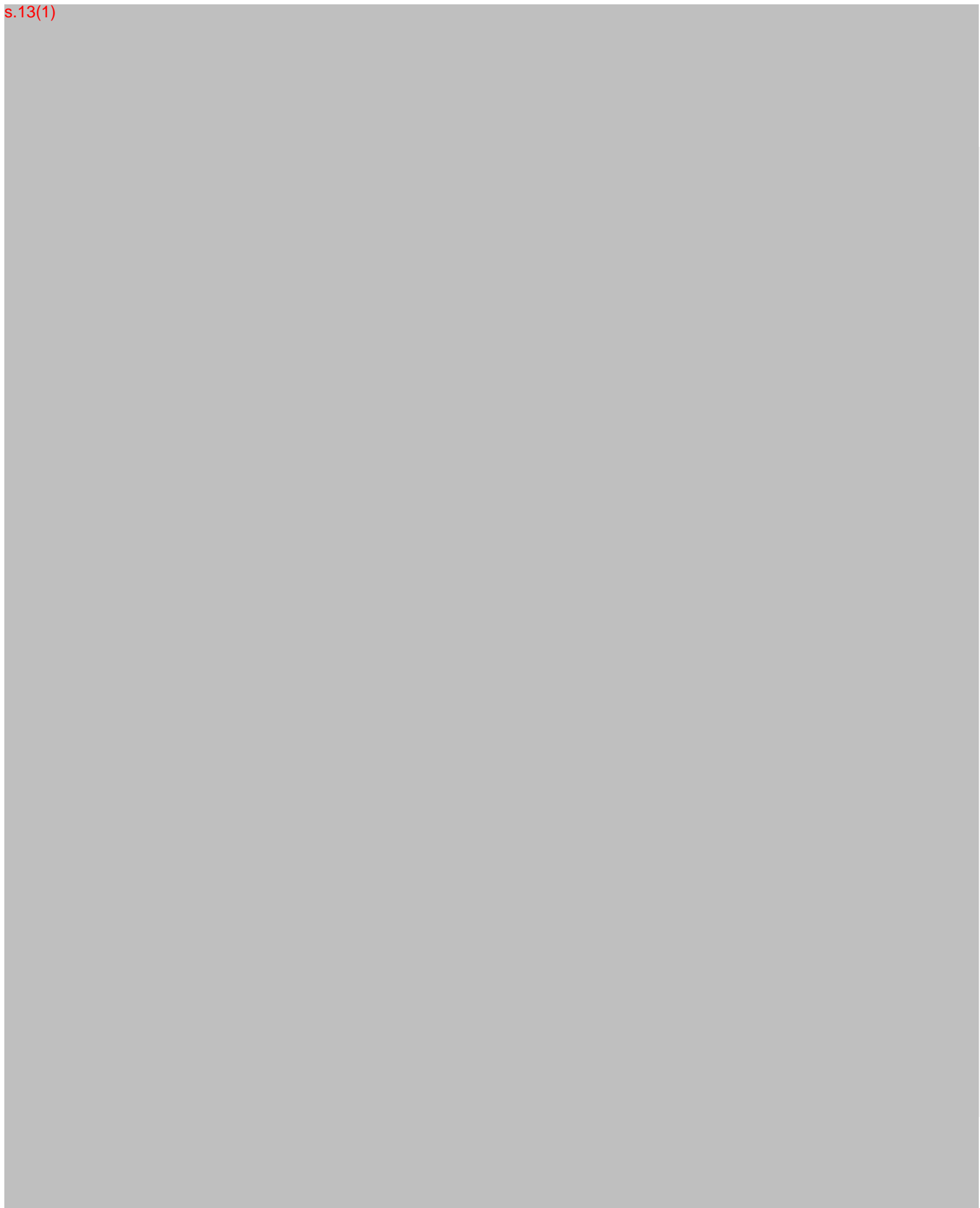


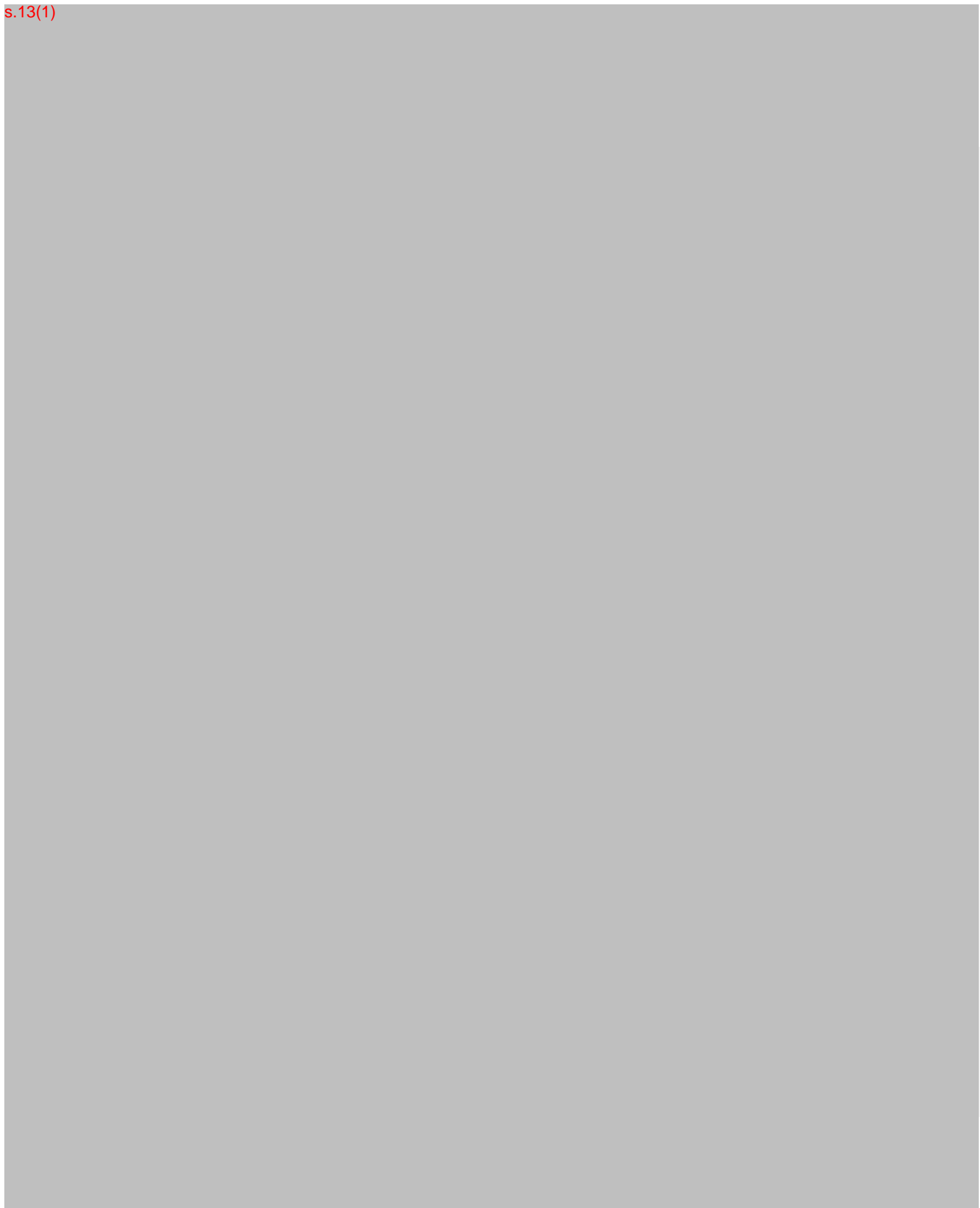


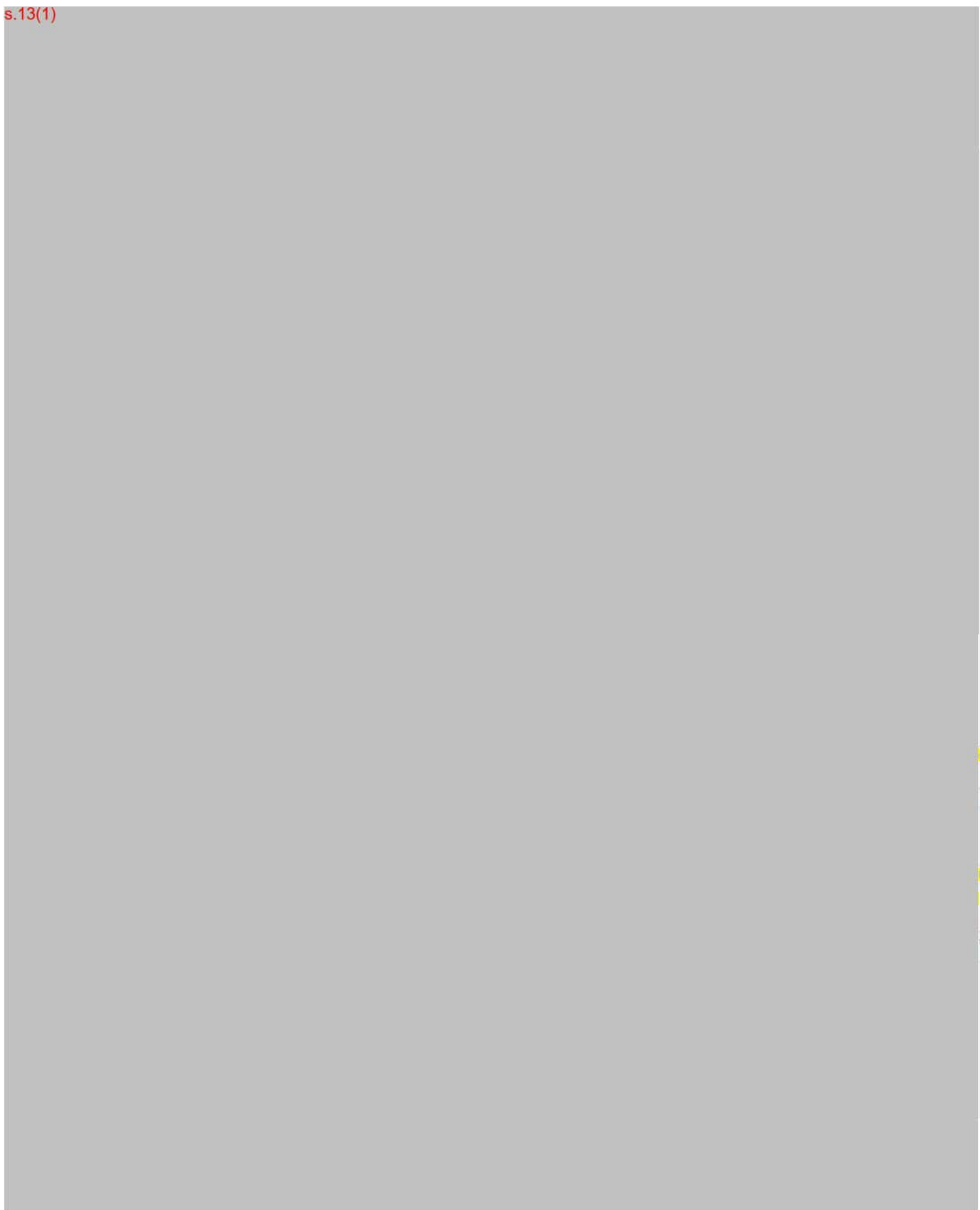


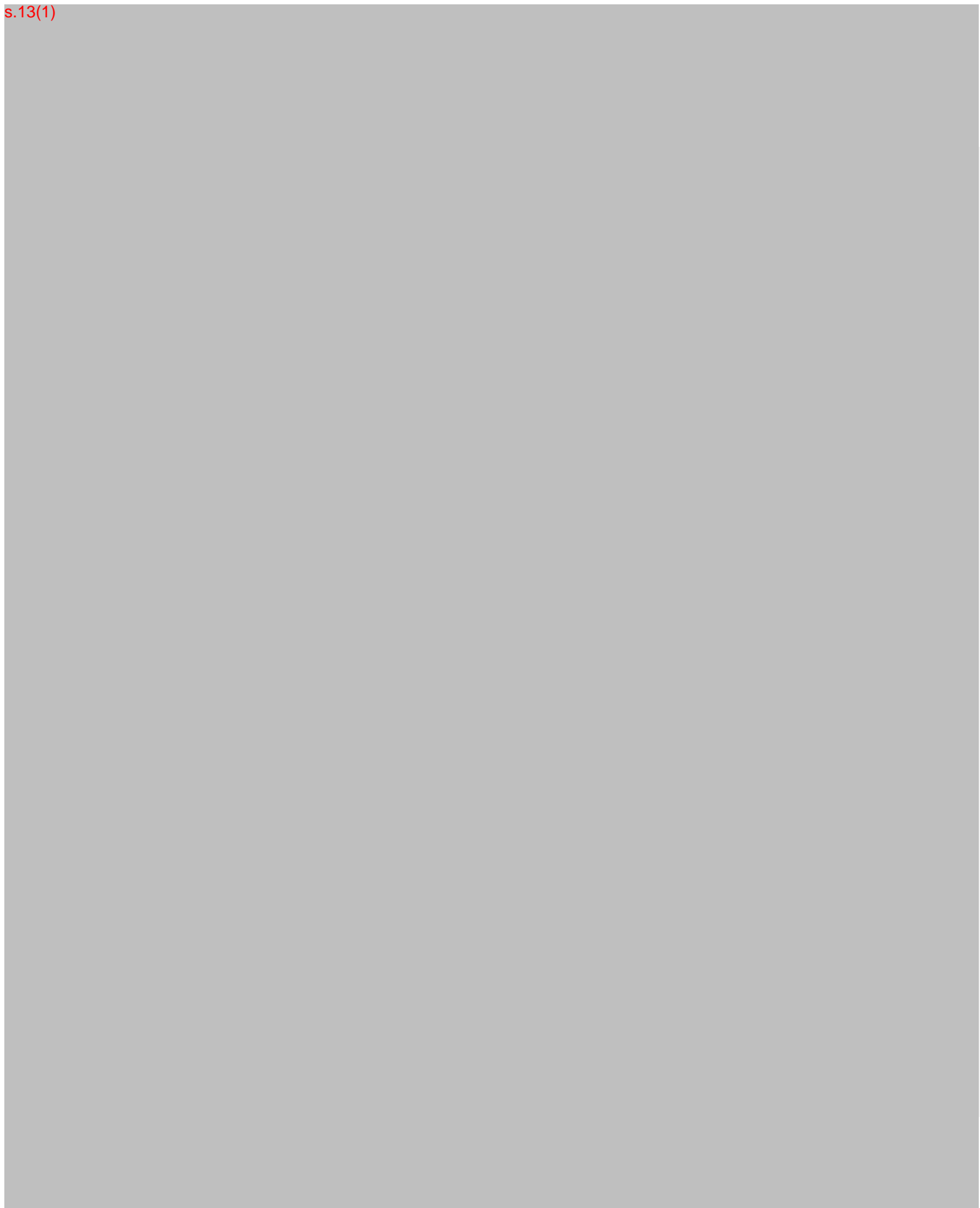


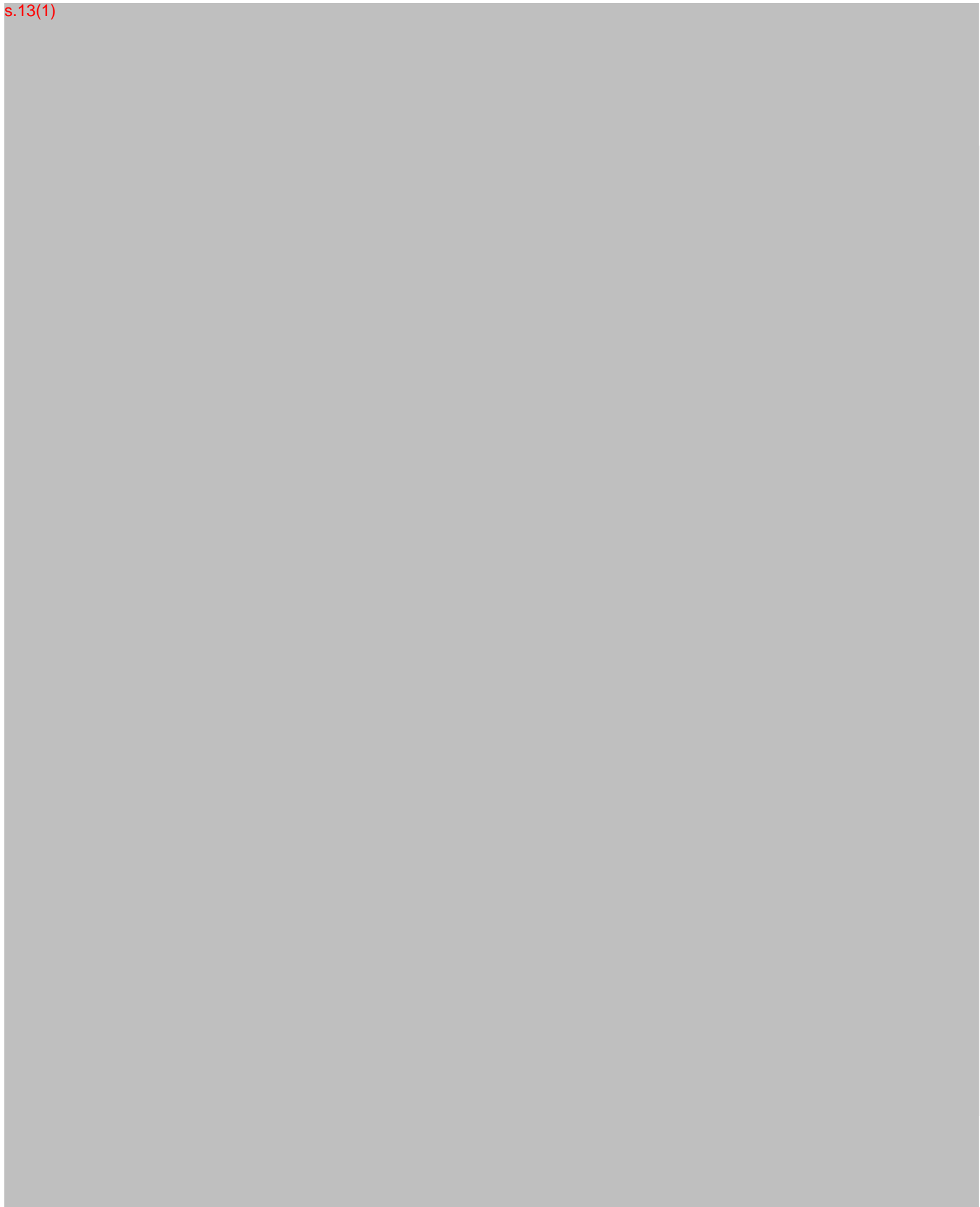


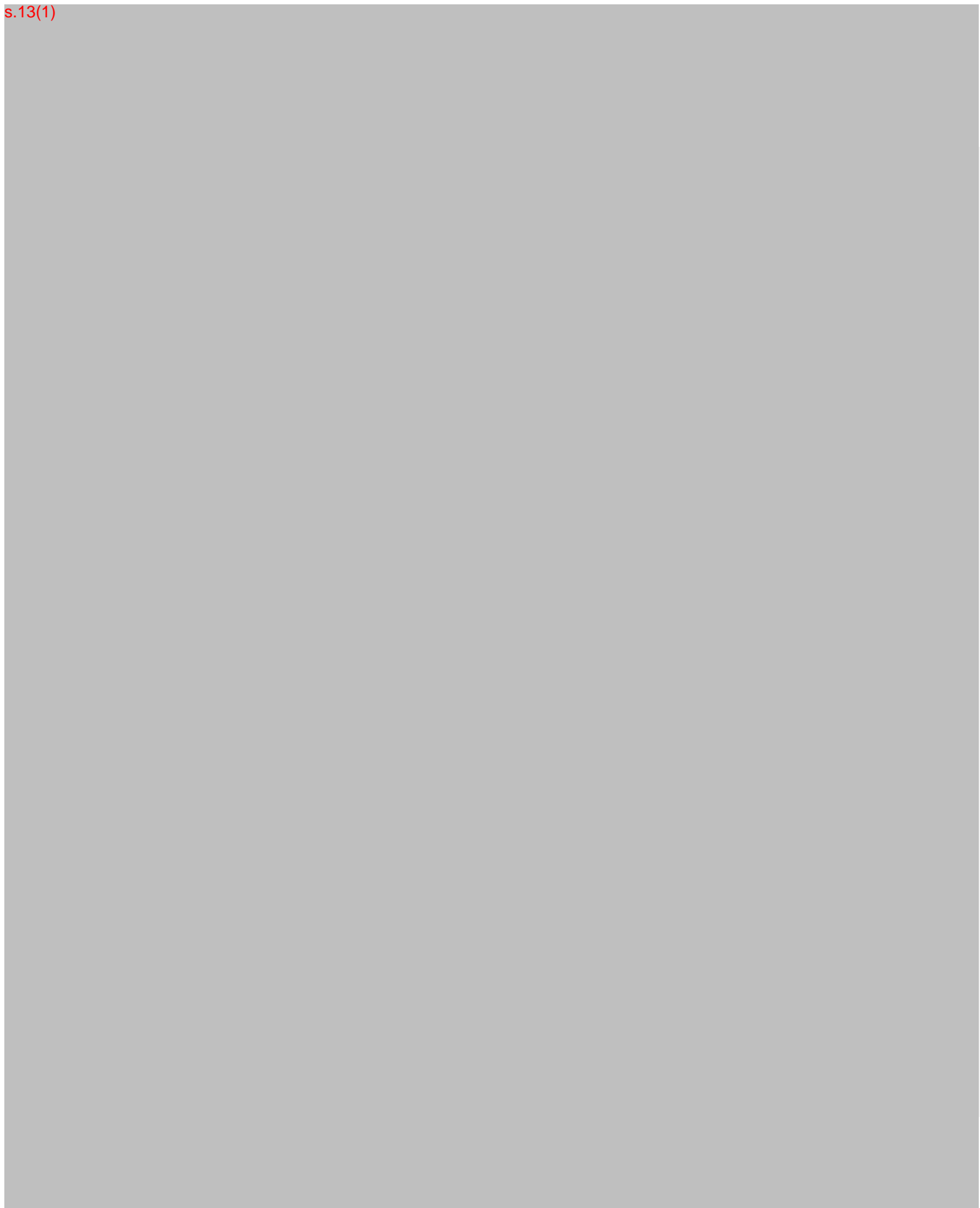


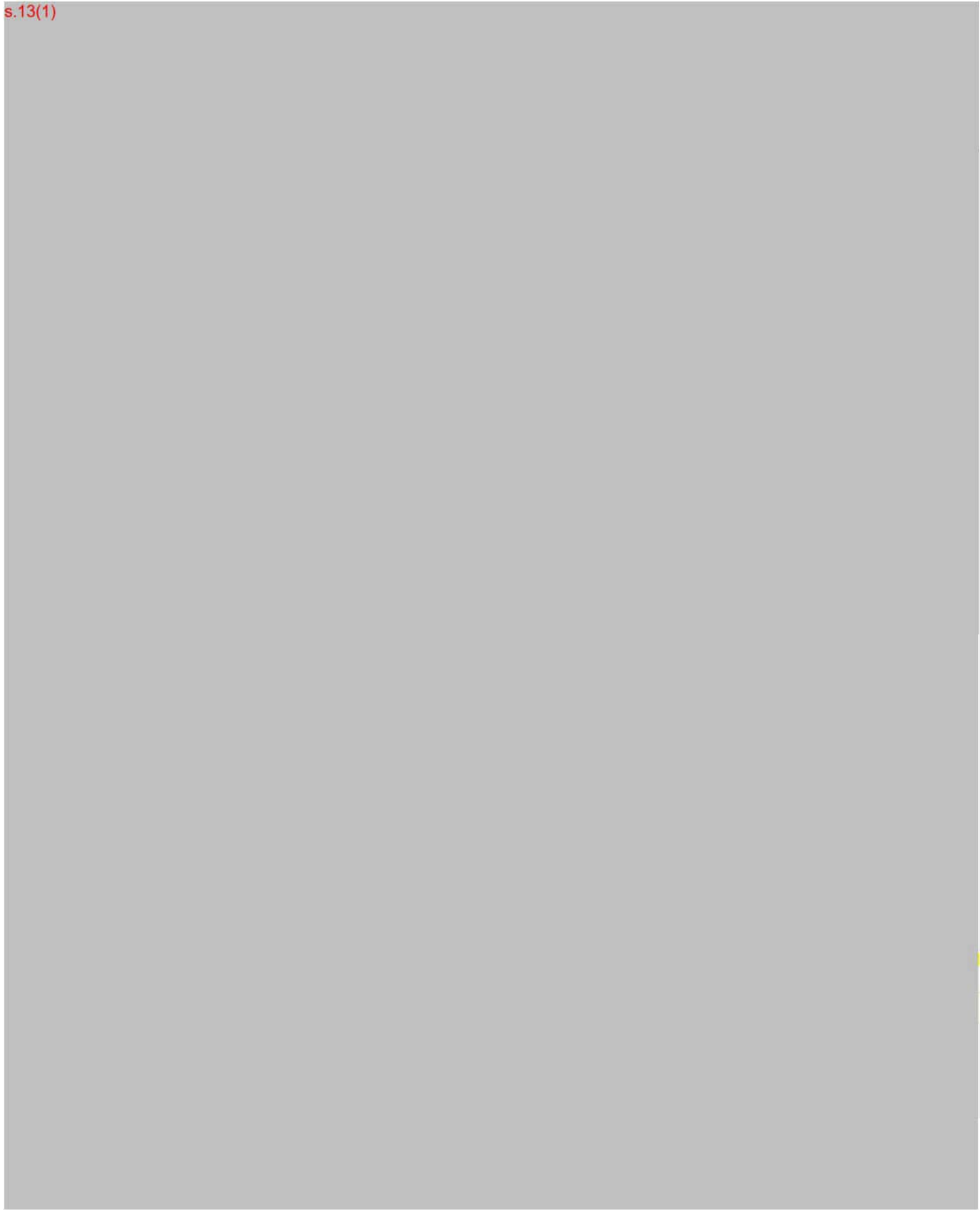


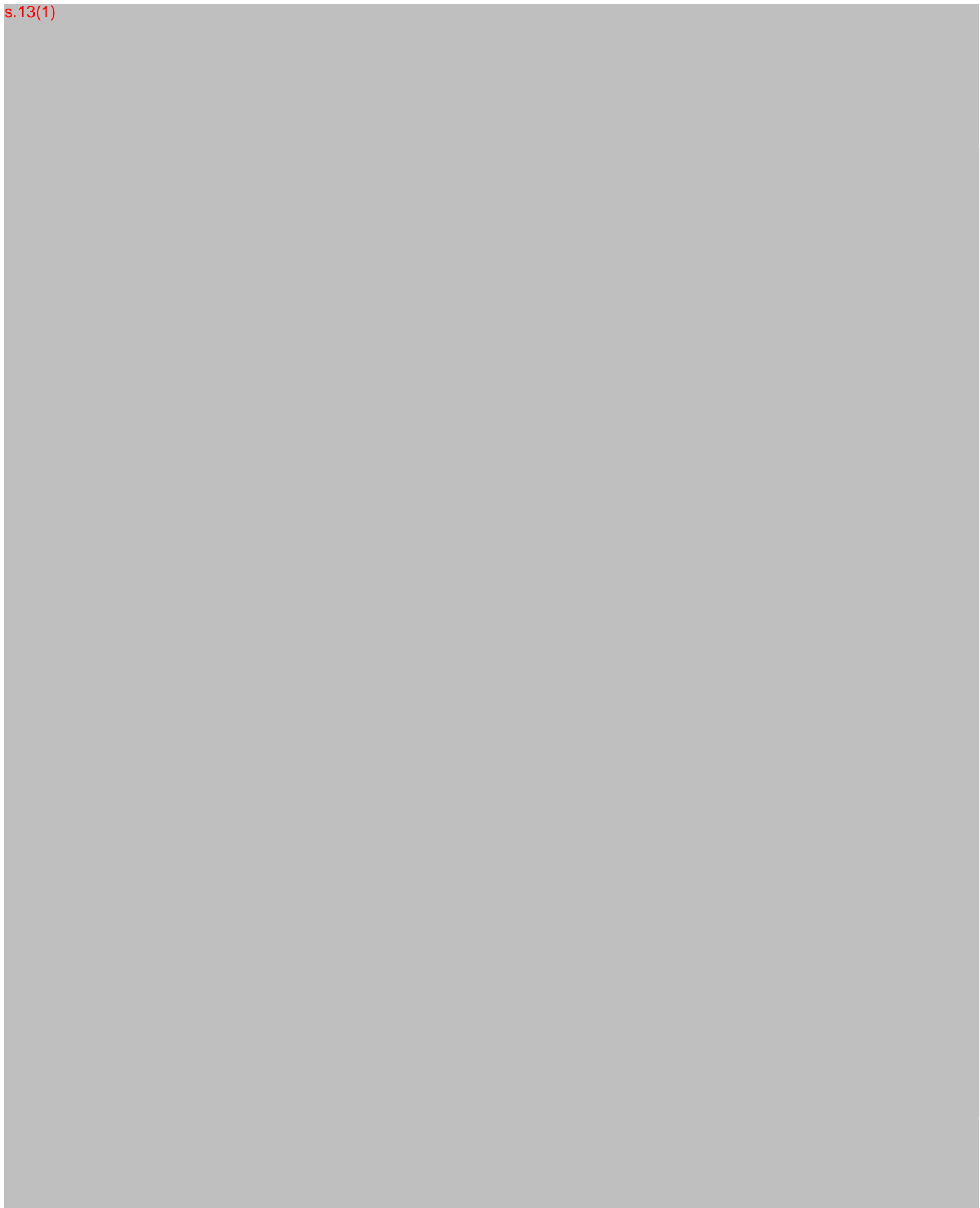


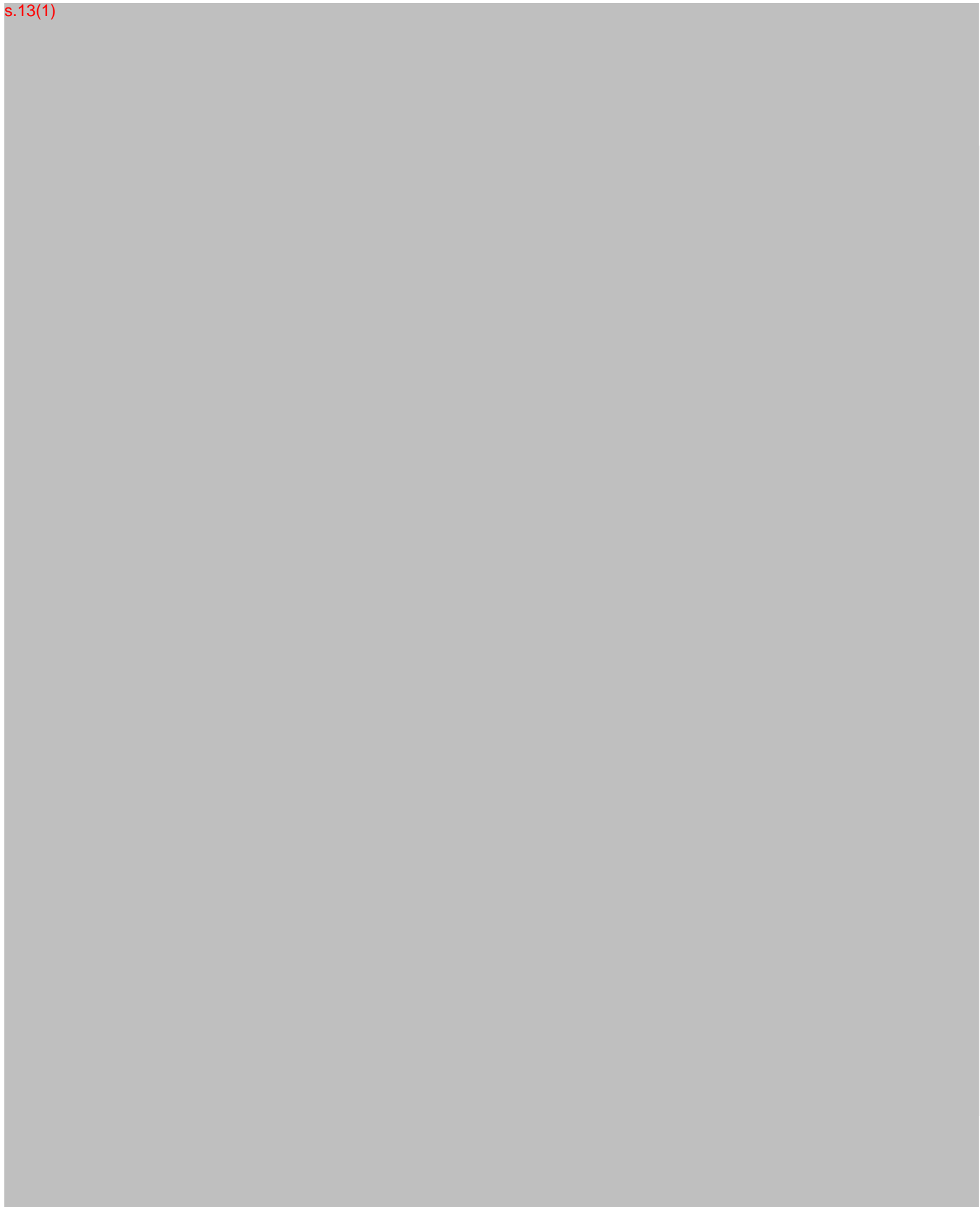


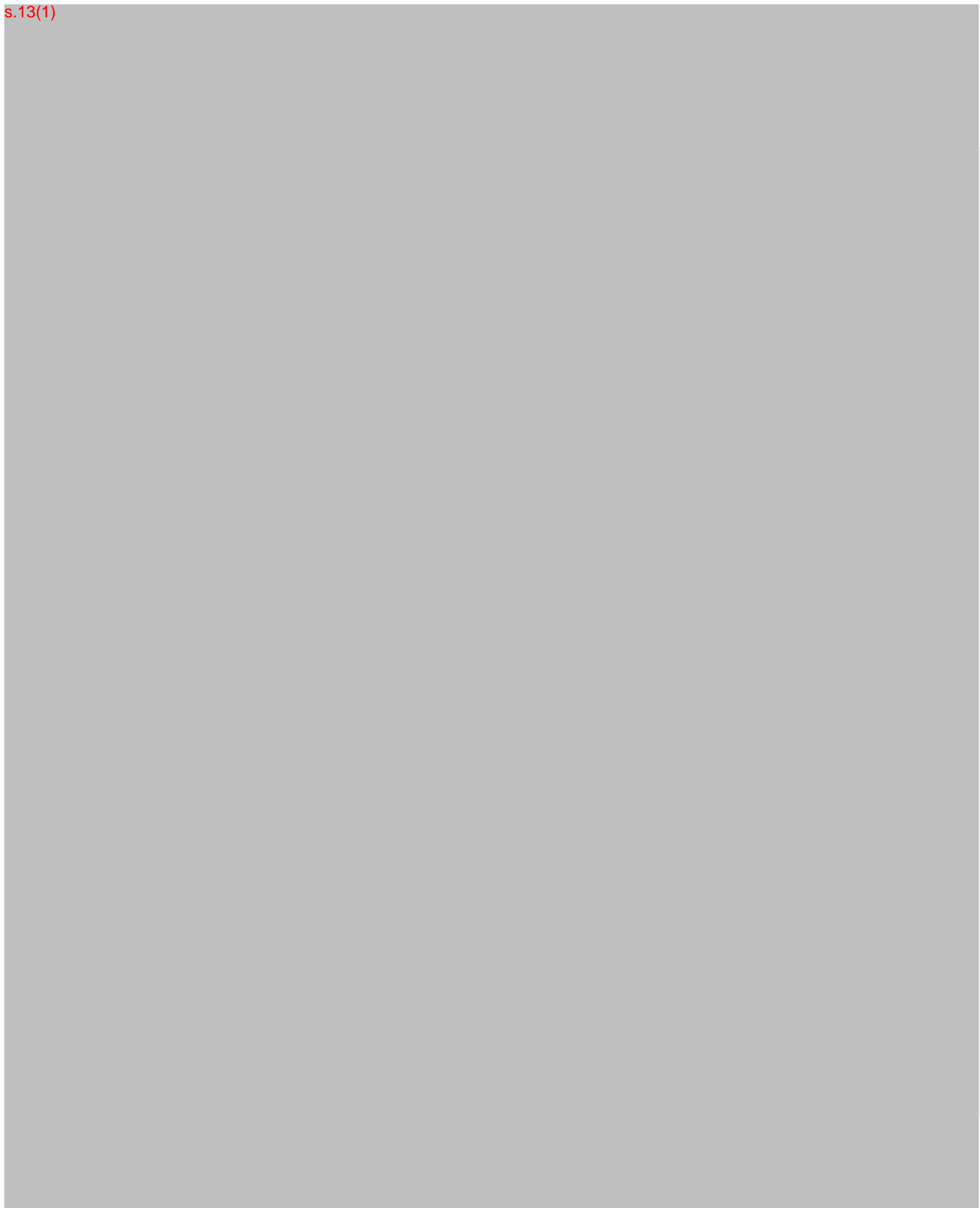


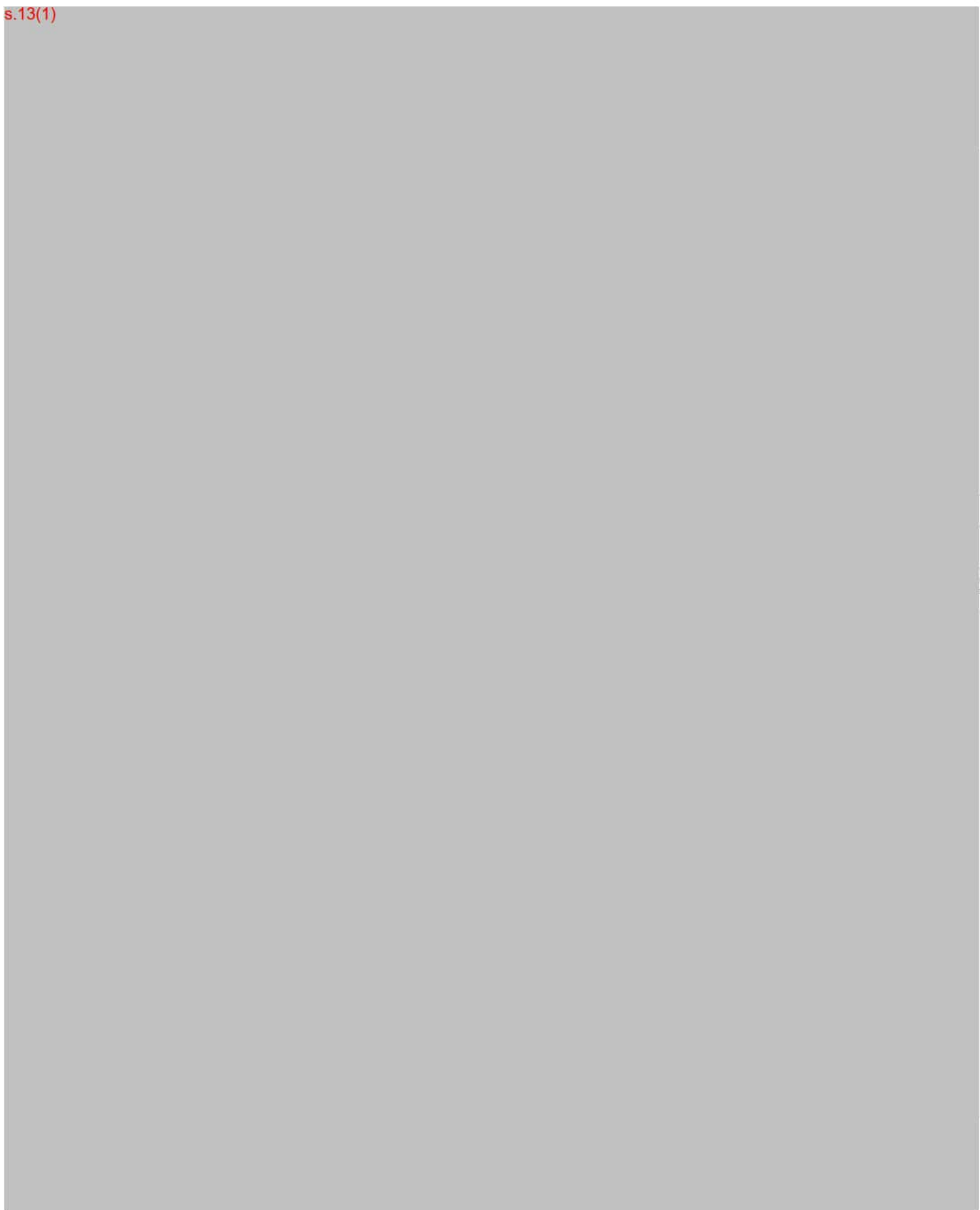


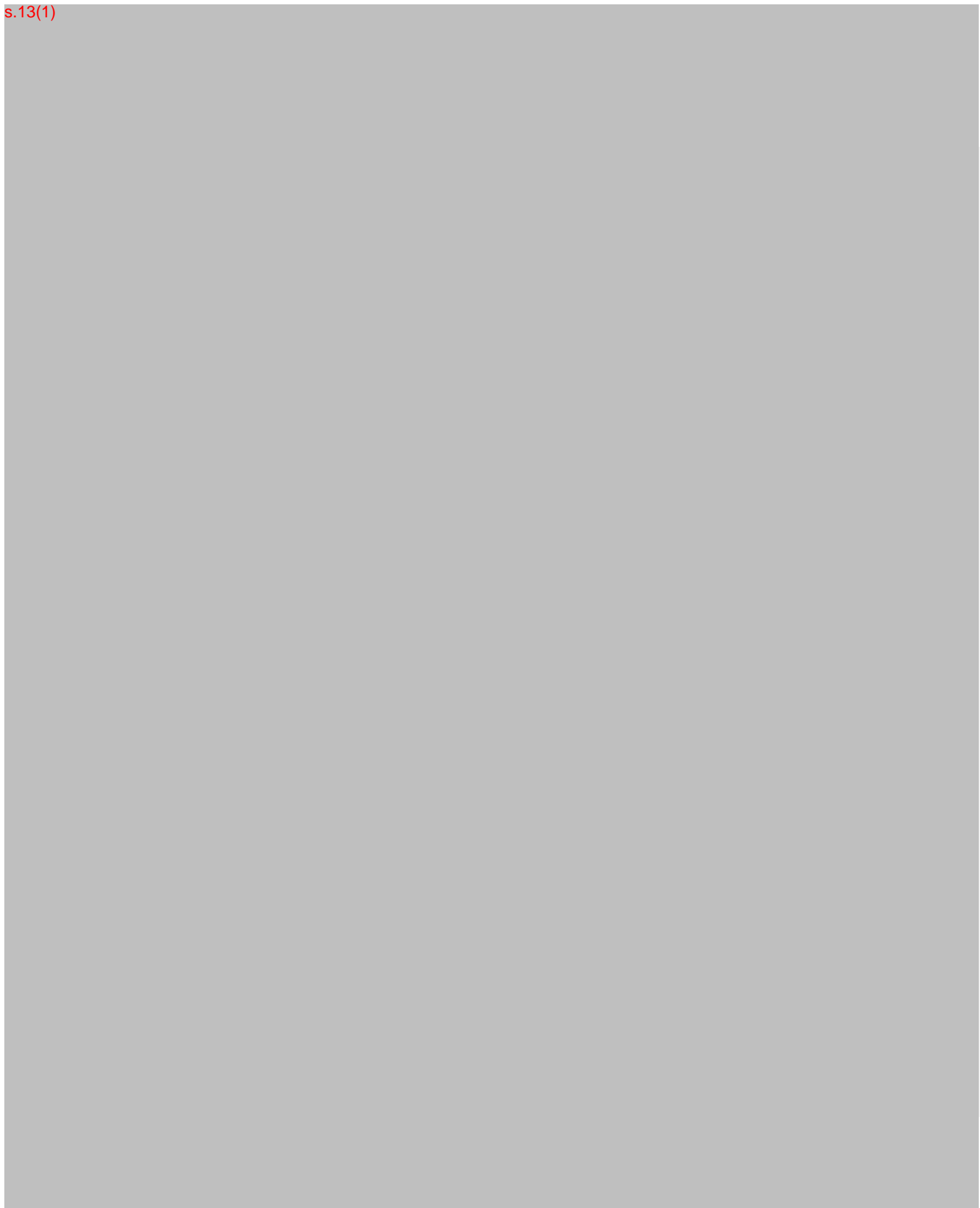


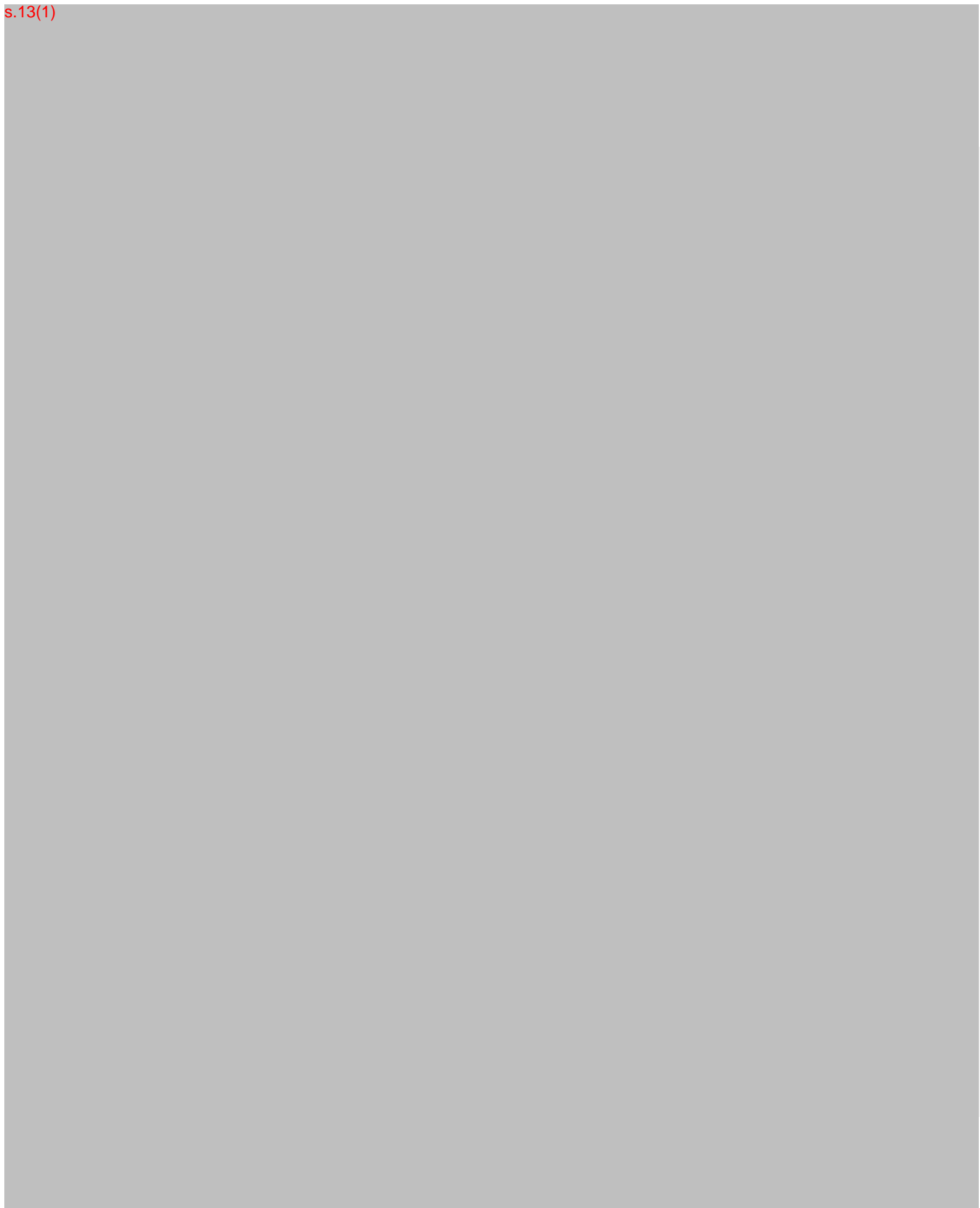


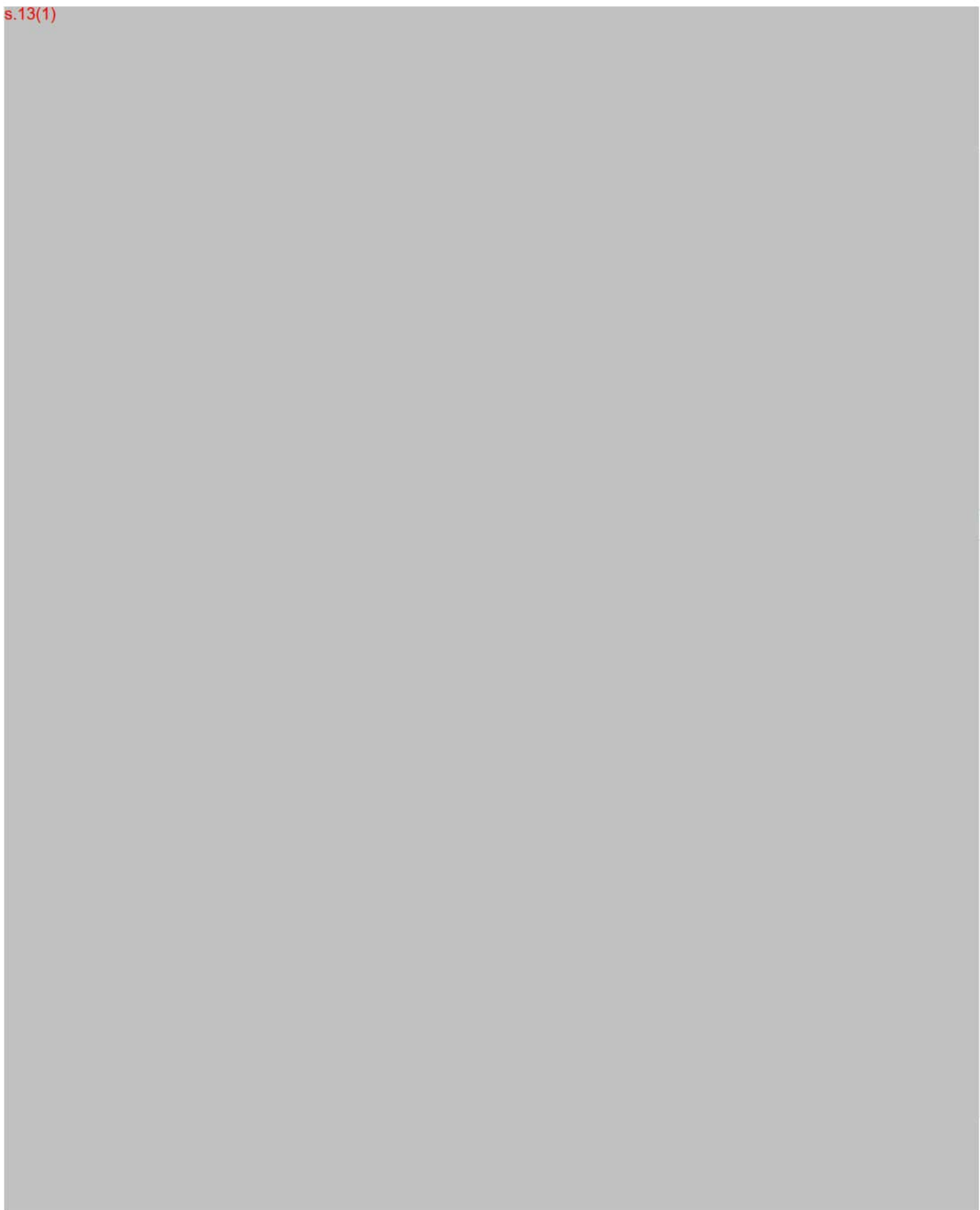


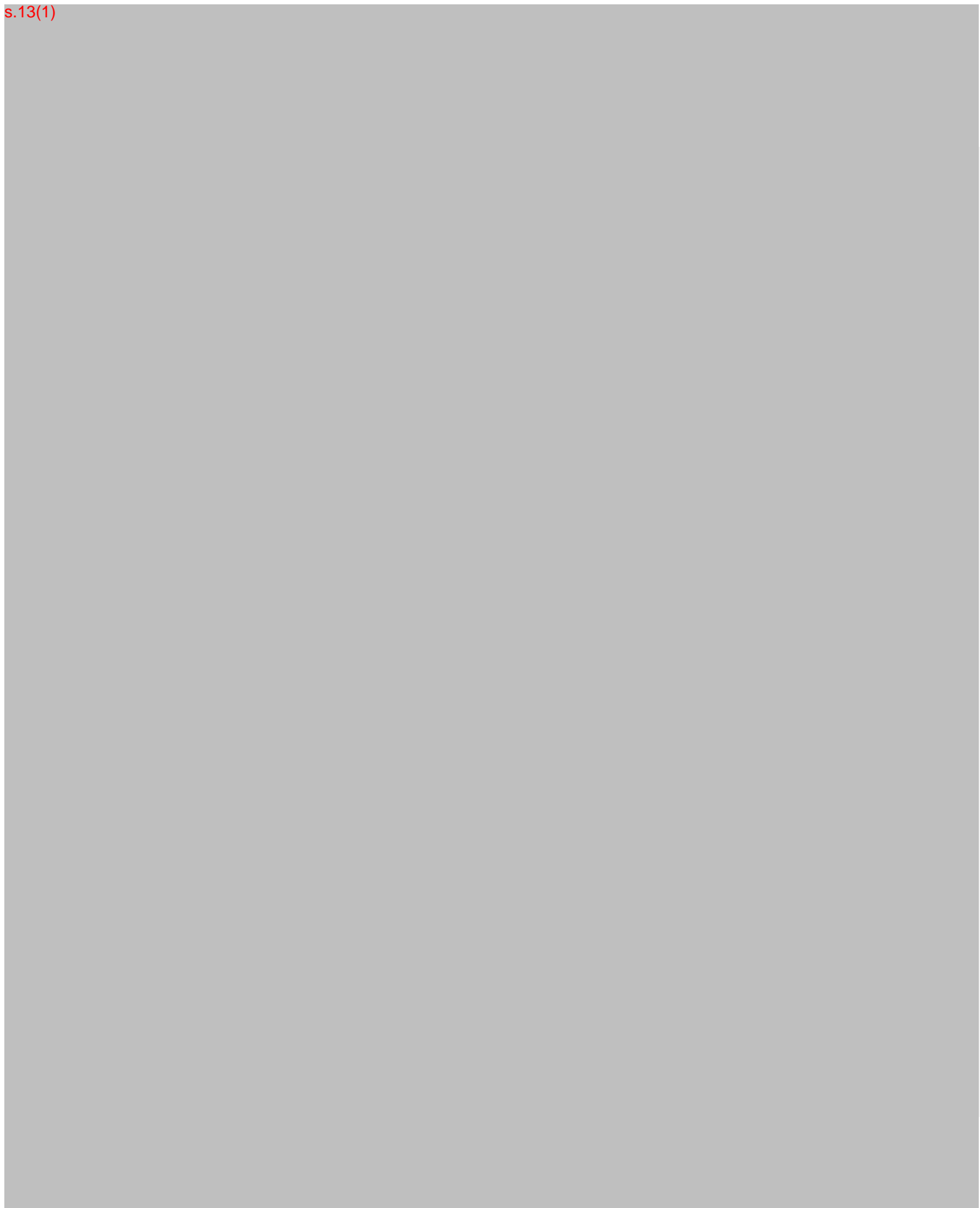


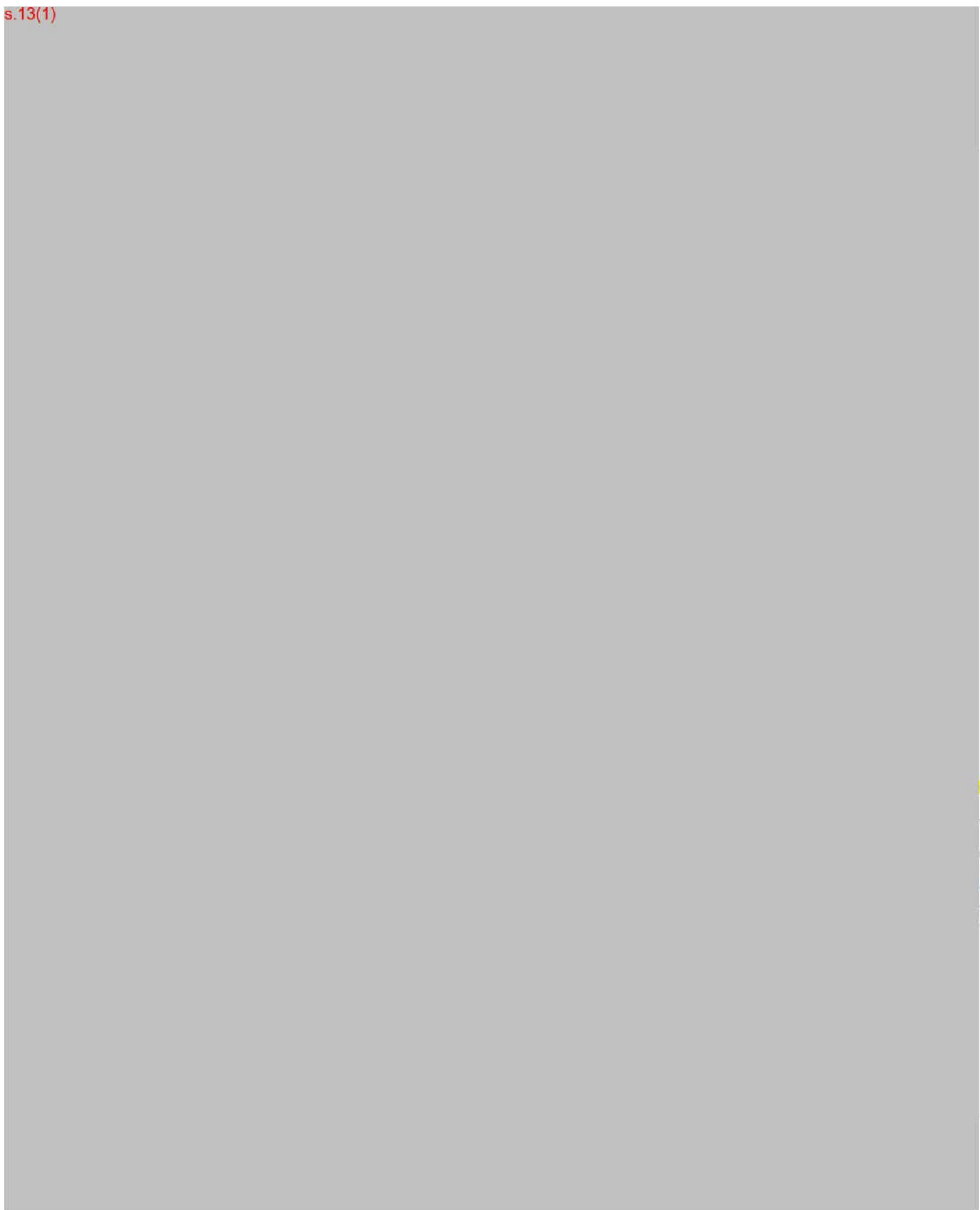




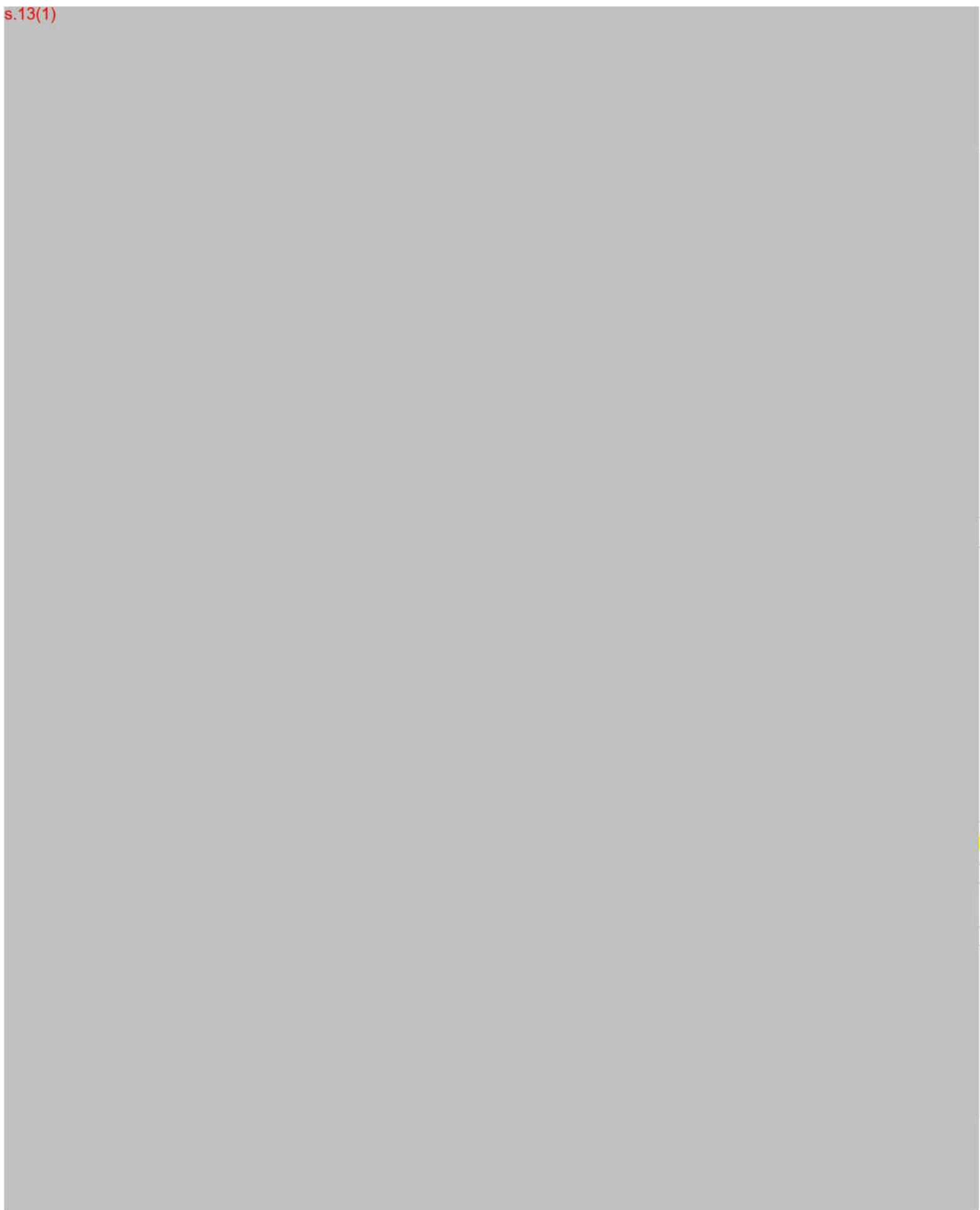


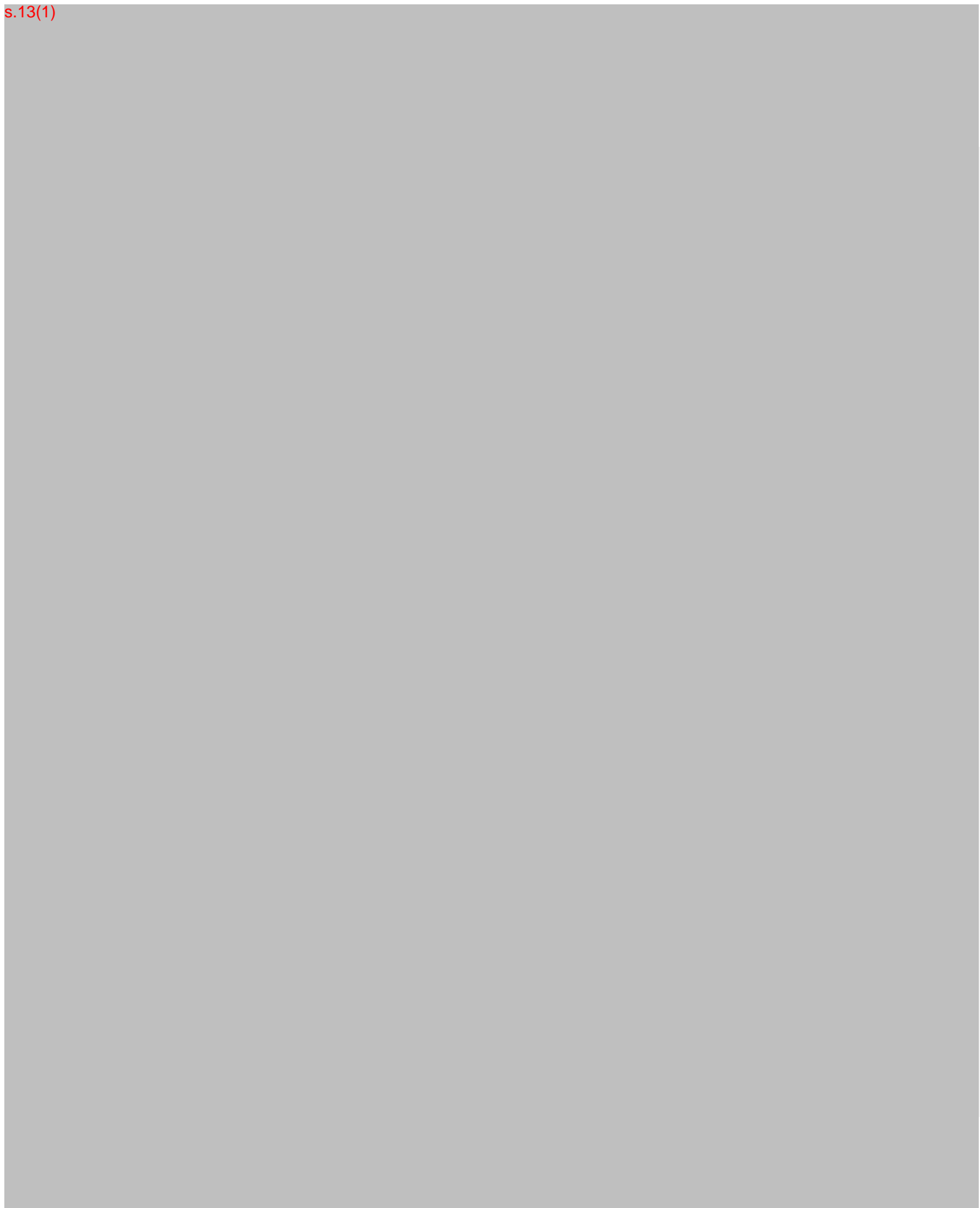




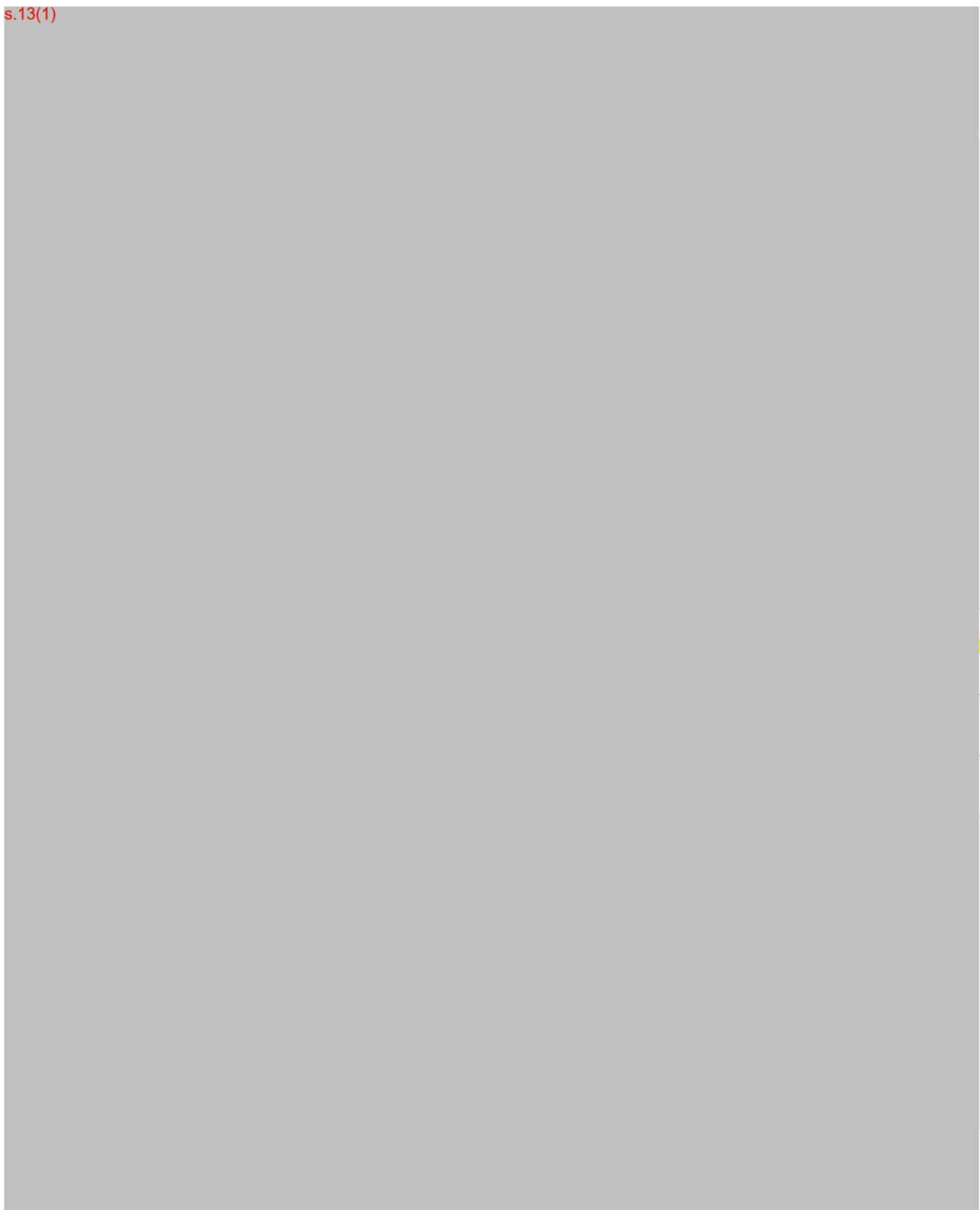


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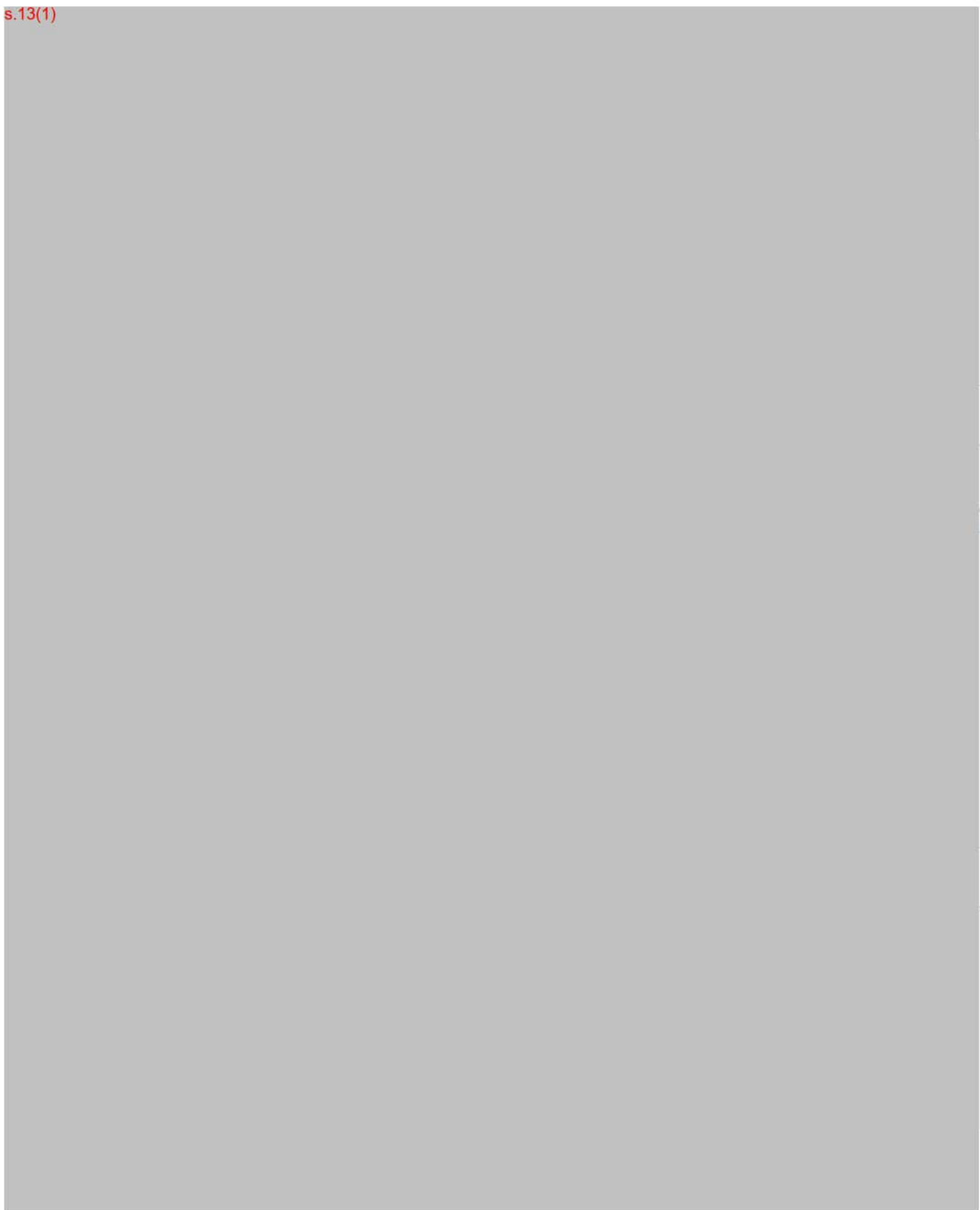




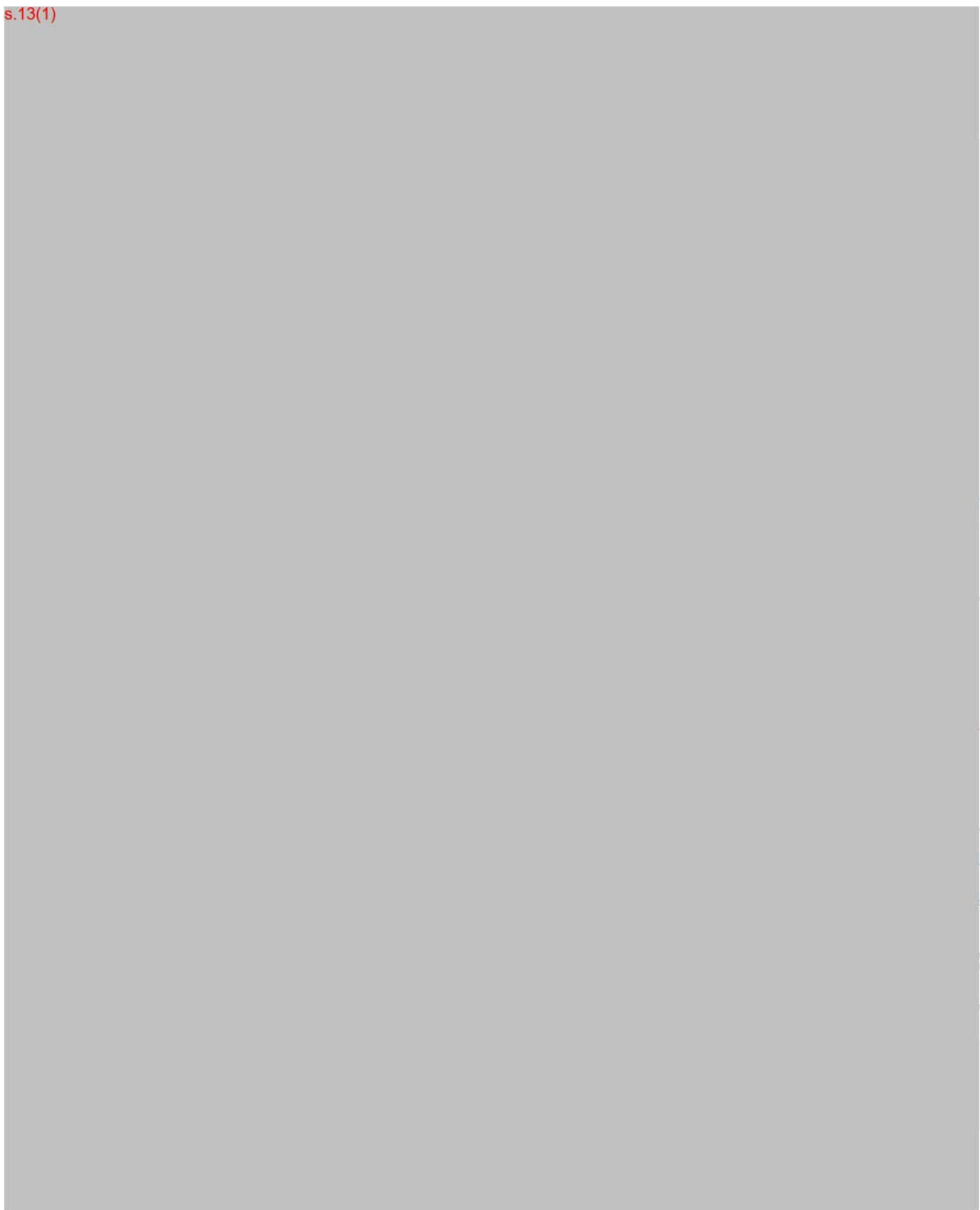




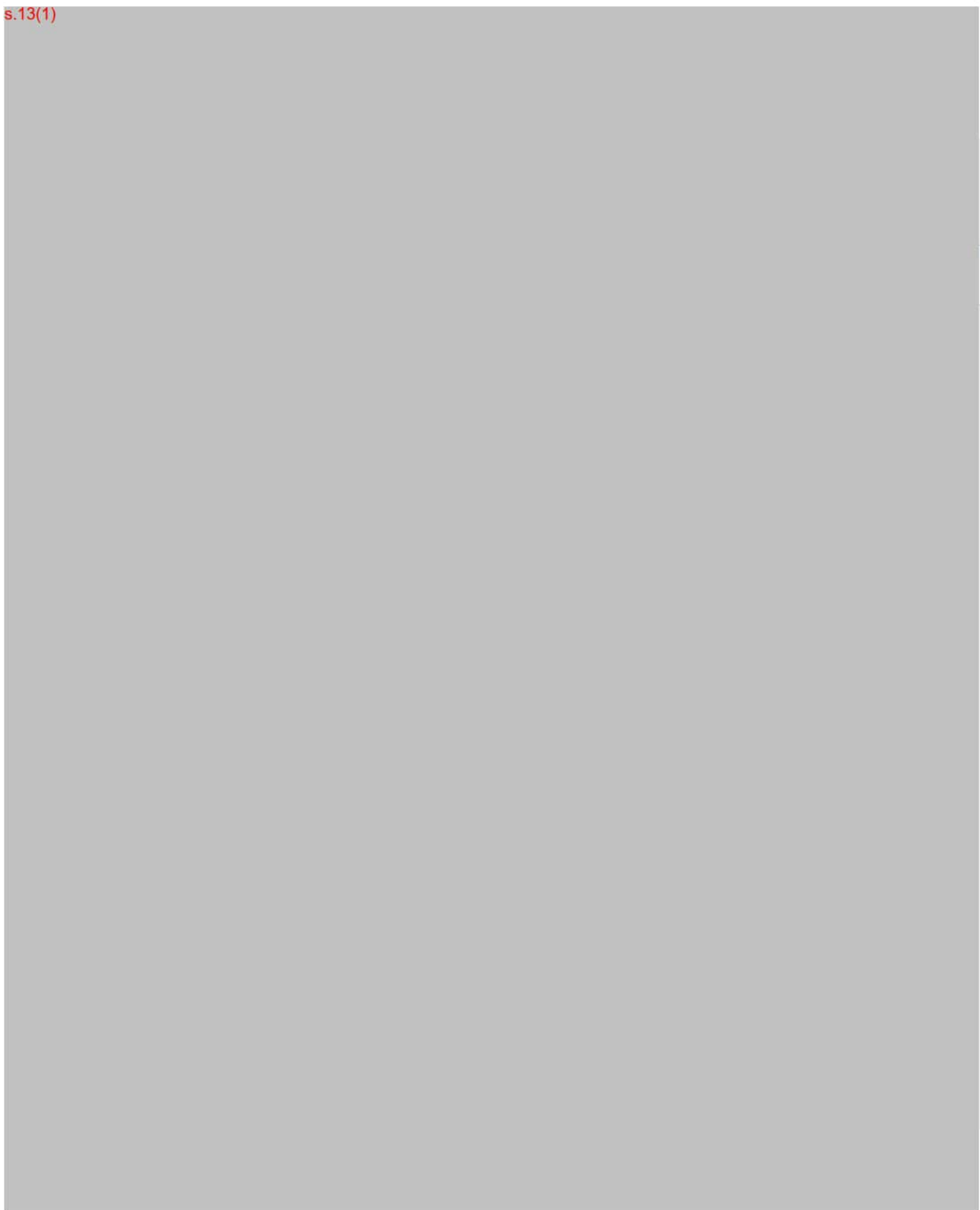
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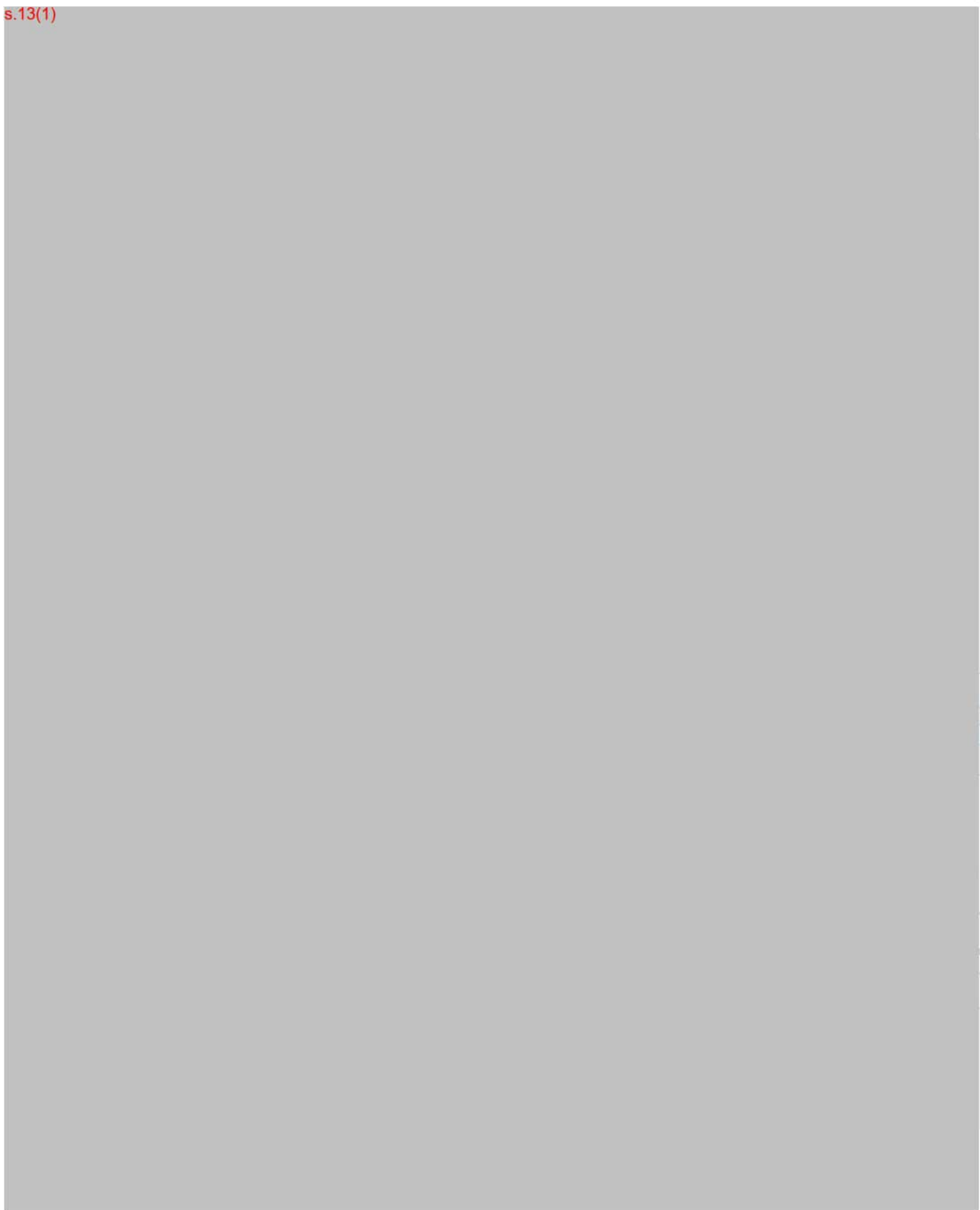


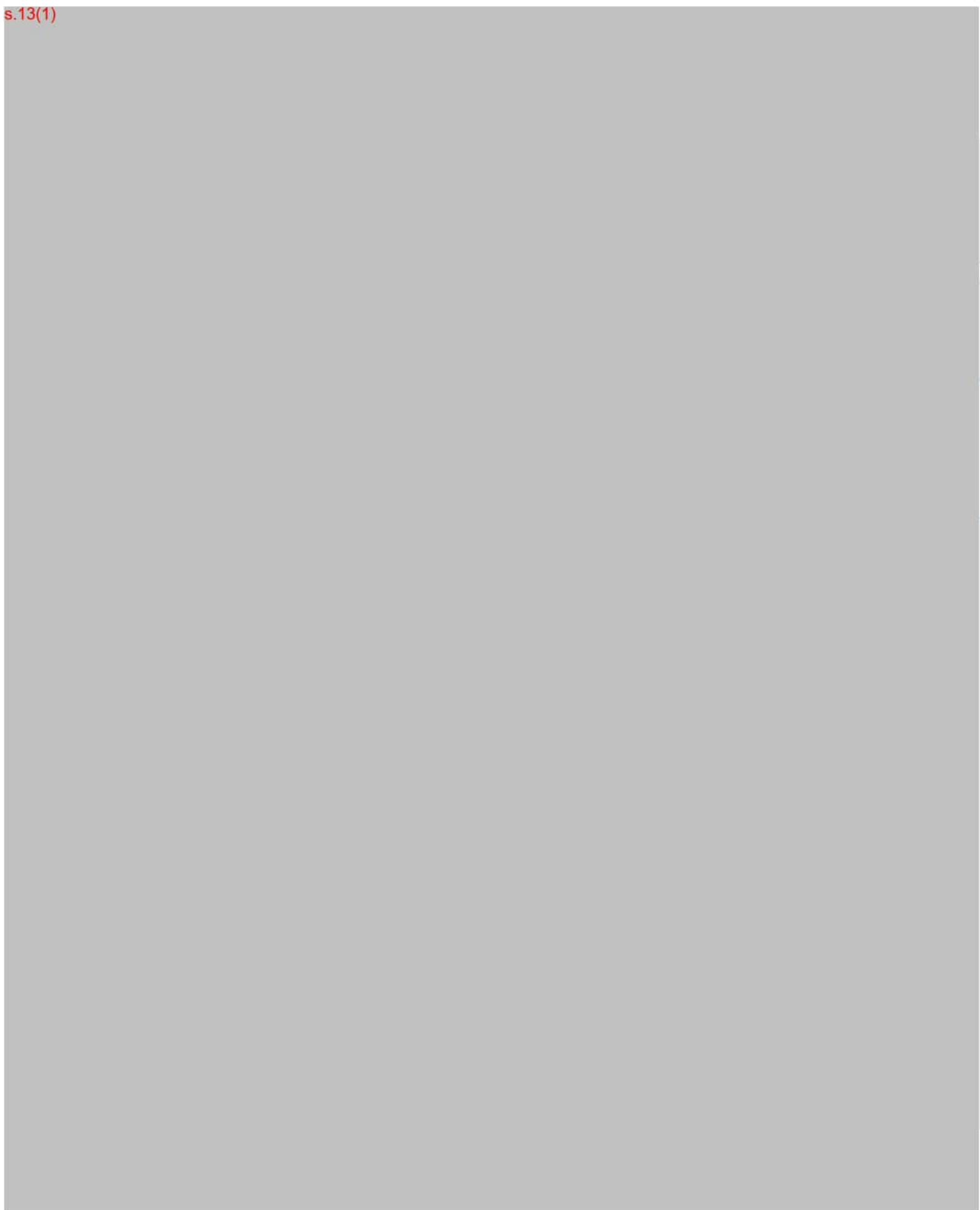
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2023 Energy Modelling Guidelines Update

Request for Proposals: Scope of Work

Contact

For questions about this scope of work, please contact:

Charling Li, P.Eng, M.Urb. | Green Building Engineer
Sustainability Group | City of Vancouver
City Hall, 7th Floor | 453 West 12th Ave, Vancouver, BC V5Y 1V4
T: 604.871.6833

Schedule

The anticipated delivery date of draft results is: Monday, May 15th, 2023

The anticipated dates of 2 proposed workshops are: Week of June 5th, 2023

The anticipated delivery date of final results is: Monday July 10th, 2023

Background

The Zero Emissions Building Plan (ZEBP¹) seeks to reduce the operational emissions of new construction in Vancouver to zero by 2030. Changes to the Vancouver Building By-law (VBBL) were approved in May 2022 to reduce greenhouse gas intensity (GHGI) targets consistent with zero emissions heating and hot water equipment for Part 3 new construction, as well as more stringent targets on climate resilience. The City of Vancouver's Energy Modelling Guidelines (EMGs) version 2.0 needs to be updated to consolidate feedback and new knowledge that has emerged since the release of version 2.0 in July 2018.

The EMGs are used by projects to demonstrate compliance to the energy and emissions limits in the Vancouver Building By-law and is also referenced by the BC Building Code in the application of the Energy Step Code (ESC) for Part 3 buildings. While the focus of the update will be to reflect Vancouver's context, proponents are encouraged to consider the implications of these updates to users of the provincial ESC and lead discussions on these implications at the stakeholder workshops (see Deliverables).

Intent

¹<https://vancouver.ca/files/cov/zero-emissions-building-plan.pdf>

The intent of this scope of work is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025².

Scope

Throughout the delivery of this scope of work, the proponent should consider applicability or constraints of the common energy modelling software used by modelling professionals in BC for Part 3 large new buildings. Proposed modelling methodologies should work for these modelling software; otherwise provide a recommendation on whether specific software should no longer be used for the purposes of compliance modelling for VBBL or ESC.

It is up to the proponent to propose the necessary methodology to arrive at and justify each recommended change to the EMGs based on the scope items outlined below. Some recommendations may be based on professional judgment and experience of the proponent, while others may require some energy modelling effort to arrive at the recommended approach.

This scope of work is not intended to be an extensive modelling exercise. The energy modelling scope item 14) is meant to provide an overall summary to understand the impact to energy and emissions metrics based on by major impacts such as updated weather files, changes in DHW assumptions, and ventilation standards, etc. Proponents are expected to have access to recent and relevant completed energy models of Part 3 new buildings of different sizes to draw from for the purposes to arriving at the recommendations.

The scope of work consists of the following needs:

- 1) Weather files
 - a) Recommend a change to the standard weather file for demonstrating compliance to VBBL from CWEC 2016 to CWEC 2020 or to another weather file. The intent is to reflect best currently available information to demonstrate compliance to VBBL energy & emissions limits at the time of design.
 - b) Recommend standard weather file(s) for completing sensitivity analysis under future climate conditions (e.g. specify climate files with time-scale and Representative Concentration Pathway, or source of climate files, etc.) or the use of Reference Summer Weather Years³. See also Section 5).
- 2) Domestic hot water
 - a) Provide recommendations on whether to include the following changes as per the recommendations of the report "Calibrating the Zero Emissions Building Plan and BC Energy Step Code"⁴
 - increasing peak load assumption to 0.0021L/s/person (Section 3.1.4.1 of the report)

² <https://council.vancouver.ca/20220517/documents/R1a.pdf#page=34>

³ <https://nrc-publications.canada.ca/eng/view/object/?id=abcd0186-37f3-4051-b752-688f04b7063c>

⁴ Crosby, S. 2019. "Calibrating the Zero Emissions Building Plan and BC Energy Step Code" Report for the Greenest City Scholars Program. https://www.researchgate.net/profile/Sarah-Crosby-2/publication/336654063_Calibrating_the_Zero_Emissions_Building_Plan_and_BC_Energy_Step_Code/links/5e583818a6fdccbeba079aa4/Calibrating-the-Zero-Emissions-Building-Plan-and-BC-Energy-Step-Code.pdf

- adopting a seasonal multiplier to DHW use (Section 3.1.4.2)
 - adopting a recirculation DHW heat loss factor (Section 3.1.4.3)
 - adopting a multiplier for non-submetered DHW (Section 3.1.4.5)
- b) Suggest any other recommendations to improve modelling of domestic hot water use, if any.
- 3) Ventilation Standard
- Provide advice on the implications of the changes to TEDI, TEUI, GHGI and CEDI using ventilation rates in ASHRAE 62.1 -2016 Ventilation and Acceptable Indoor Air Quality as opposed to current VBBL referenced ASHRAE 62.1-2001 for ventilation.
- 4) Overheating analysis for Passive Cooled Buildings
- Recommend standardized assumptions for estimating the number of overheating hours for passively cooled buildings (section 4 of the EMGs) for the purposes of demonstrating compliance with overheating limits within VBBL and ESC. The proposed methodology or assumptions should apply to common natural ventilation and other passive cooling strategies and be simple to apply across different project designs and conditions. Include guidance on the following:
- a) Modelling natural ventilation and shading – for example, how window/patio door opening areas are calculated, how much airflow through openings, schedules of operation, external or internal operable shading.
 - b) Occupant assumptions such as clothing, metabolic rate, local airspeed, etc.
 - c) Other modelling assumptions such as thermal massing
 - d) Recommend whether to require the calculation of operative temperature instead of dry bulb temperature in thermal comfort/overheating analysis based on ASHRAE 55 Section 5.3. Include any technical or software constraints associated with this recommendation.
 - e) Recommend changes to the values in Table 4 “Acceptability Limits for Naturally Conditions Spaces in Vancouver” in Section 4 of the EMGs to a standard minimum value across all month, with the intent to accommodate projects outside of Vancouver conducting overheating hours analysis for ESC compliance.
- 5) Resilience to future climate and shock events
- a) For buildings with partial cooling or no active cooling: recommend a methodology for sensitivity analysis of how the number of overheating hours will shift in the future, such as time period to be modelled, the weather files to be used, etc.
 - b) For buildings with active cooling: recommend a methodology for sensitivity analysis of overheating hours in the event of a power outage. Suggest a scenario and set parameters for analysis such as the duration of the power outage, the time period to be modelled, the weather files to be used, the number of overheating hours above a thermal safety threshold temperature, etc. Suggest an approach to encourage design teams to explore additional ways to reduce overheating hours during a power outage with the intent to improve the passive survivability of the building.
 - c) Recommend a standard methodology and weather files to be used to analyze and report on how peak cooling and heating loads, TEDI, TEUI, GHGI and CEDI change between current and future climate scenarios. Include recommendations on how this information may be presented in the Energy & Emissions Design Report.
- 6) Cooling Energy Demand Intensity

Establish a standard methodology for calculating cooling energy demand intensity applicable to all building designs including those with full, partial or no mechanical cooling systems.

7) Refrigerant impact – GHGI-R

Projects will be required to account for the greenhouse gas impacts of refrigerants (GHGI-R) in the whole-building GHGI limit as of January 2025. Draft a new guidance section in the EMGs on GHGI-R that includes the following:

- a) Provide recommendation on incorporating GHGI-R estimates in early design for whole building GHGI compliance, based on existing available resources⁵. Reference existing GHGI-R calculation methodology from the Green Buildings Policy for Rezoning – Process and Requirements (amended June 14, 2019)⁶ to the EMGs and recommend updates to the methodology as necessary.
- b) Recommend whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume of refrigerant (nominally 225g)⁷ or a specific cooling capacity (19kW)⁸, or align with any other relevant standards or regulations.
- c) Update the definition of GHGI to include refrigerant impact.

8) Compliance for actively cooled buildings

As of January 2025, dwelling units within Part 3 buildings will be required to have active mechanical cooling capable to maintaining an indoor air temperature of 26°C with windows closed. Provide a recommendation on how compliance may be demonstrated through energy modelling. For example, the weather files and/or peak design condition to be used, the time period to be modelled, any mechanical system details or other compliance information or metrics to be provided by the design and modelling team, etc. Provide insight on any changes to the design and modelling teams' workflow that may be required to demonstrate compliance.

9) Form Factor for slim buildings' TEDI targets

Propose an adjustment factor for small and/or narrow buildings where TEDI targets may be difficult to achieve due to its form factor.

10) Energy efficiency recommendations

Provide technical and policy recommendation on the following items with the intent to further encourage selection of more energy efficient options:

- a. Appliances: should the current credit for EnergyStar appliances for TEUI continue, or should the default modelling assumptions for these appliances be adjusted to Energy Star requirements?
- b. Lighting – is an update to modelling assumptions for lighting necessary and are there other mechanisms to drive better more energy efficient lighting design
- c. Elevators – propose a revision to the current assumption on elevator load or an alternative modelling method to encourage the selection of more efficient elevators
- d. Laundry appliances – does the current assumptions on modelling in-suite laundry require updating?

⁵ <https://vancouver.ca/files/cov/refrigerant-impact-ghgi-study.pdf>

⁶ <https://vancouver.ca/files/cov/bulletin-green-buildings-policy-for-rezoning-2019-june14.pdf>

⁷ Based on LEED v4 Credit Enhanced Refrigerant Management

⁸ Based on Zero Carbon Buildings v3

11) Miscellaneous recommendations

Provide technical and policy recommendations on the following items. Some questions are provided as a starting point for consideration; the proponent is encouraged to provide additional perspectives as they see fit.

- a) Clarify the application of the corridor pressurization adjustment for buildings using energy/heat recovery ventilation systems for corridor supply and return air
- b) The reduction of maximum corridor pressurization adjustment value for TEDI and TEUI to 5
- c) The removal of the corridor pressurization adjustment for GHGI
- d) What space uses/types should be included within the building's Modelled Floor Area and Gross Floor Area (e.g. below grade storage or bike storage), and justifications based on anticipated impact on TEDI, TEUI, GHGI, CEDI metrics, etc.
- e) Recommend changes to the current sub-metering adjustment for hot water for space heating (see 2.7 of the EMGs), if any. Consider whether the adjustment should be removed for simplicity and/or practicality, or if the adjustment should be expanded to include TEDI and DHW heating.
- f) Recommend whether any further clarifications are needed on the role of the energy modelling professional making reference to the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services⁹

12) GHG reduction target methodology for Groups A, B, and F major occupancies

Draft guidance language on the modelling steps for Groups A, B and F major occupancies with GHG reduction targets in VBBL to determine the GHG reduction target based on an all fossil-fuel baseline modelled as per ASHRAE or NECB requirements. If different modelling steps are required for ASHRAE or NECB projects or for different modelling software, provide guidance for different cases.

13) Review CSA Z5020 Building Energy Modelling Standard

Provide a high-level review of the soon-to-be published *CSA Z5020 Building Energy Modelling Standard* to identify any significant differences to technical modelling procedures or assumptions compared to the EMGs; provide recommendations on changes to EMGs if necessary.

14) Energy Modelling & Report

- a) Apply at least two archetype buildings (at least one 6-storey residential, one 7+ storey residential, etc.) that include typical buildings systems meeting current VBBL requirements, modelled under the methodologies and assumptions outlined in v2.0 of the EMGs and compare the modelled results with the major recommendations from the above list. Provide comparison of how TEDI, TEUI, CEDI, GHGI and overheating hours are affected by the recommended changes. In responding to this RFP, the proponent should specify the methodology for this step.
- b) Provide a brief report on how various components of building energy usage may be affected by the changes listed above, along with the proponent's list of recommended changes. The report should also provide brief commentary on any significant changes to energy modelling or design workflow related to the recommended changes.

⁹ <https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW7JPMODAJKVYBCLHGRA24FJJPH3/Whole%20Building%20Energy%20Modelling%20Services>

15) Engagement with stakeholders

Organize and facilitate a minimum of 2 (two) virtual workshops to share proposed changes to the following groups and gather feedback in June 2023. Create an online survey to collect written feedback to a draft version of the EMG changes. The survey should be made live in time for the workshops and remain open for 4 weeks.

- a) Workshop #1 with stakeholders to include relevant code compliance professionals from BC's Climate Action Secretariat, Building & Safety Standards Branch, BC Housing, BC Hydro, local municipalities etc., with approximate 10-20 individuals
- b) Workshop #2 with local energy modelling professionals (approximately 25-50 individuals)

Deliverables

The project will result in the following deliverables to the City:

- 1) Meetings with City staff as appropriate, including at a minimum:
 - a. Kick-off meeting to review scope and clarify assumptions;
 - b. Regular progress updates, bi-weekly as needed;
 - c. Presentation and review of preliminary findings with core City staff;
 - d. Organize and facilitate two workshops to share proposed changes to industry stakeholders, and to gather input on practical, technical or software issues and opportunities
 - e. Online survey to gather feedback from draft EMG changes
- 2) A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved;
- 3) A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI; and
- 4) A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.

Fenestration Energy Compliance Paths and Building Energy Modelling

By: Edward Lau, P.Eng, M.Eng

Jan. 11, 2023

Fenestration Energy Modelling

Inputs:

- 1) CAD File of profile
- 2) Materials
- 3) Type of window

NFRC Methodology
for Window Energy
Modelling: U-value

Outputs:

- 1) Window total U-value based on NFRC Size
- 2) Uframe, Uedge, Uglass
- 3) Labels from Certified Test/Sim Lab
- 4) Potential project-specific outputs (not NFRC regulated nor method provided):
 - a) Single U-value for all windows based on 3 Compliance Paths in Notes to VBBL Part 10 – A-10.2.2.7.(3)

Building Energy Modelling

Fenestration Inputs:

- 1) NFRC Uvalue
or
- 2) Uframe, Uglass

ASHRAE, NECB, COV
Energy Modelling
Guidelines, BCBC,
VBBL

Outputs:

- 1) TEDI, TEUI, etc.
- 2) Occupant comfort

Fenestration Energy Modelling

Inputs:

- 1) CAD File of profile
- 2) Materials
- 3) Type of window

NFRC Methodology
for Window Energy
Modelling: U-value

Outputs:

- 1) Window total U-value based on NFRC Size
- 2) Uframe, Uedge, Uglass
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- 4) Potential project-specific outputs (not NFRC regulated nor method provided):
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Building Energy Modelling

Fenestration Inputs:

- 1) NFRC Uvalue
or
- 2) Uframe, Uglass

ASHRAE, NECB, COV
Energy Modelling
Guidelines, BCRC,
VBBL

Outputs:

- 1) TEDI, TEUI, etc.
- 2) Occupant comfort

Flashpoint!!!

Excerpt from COV EMG

3.2 Fenestration and Doors

The overall thermal transmittance of fenestration and doors shall be determined in accordance with NFRC 100, “Determining Fenestration Product U-factors”, with the following limitations:

- (a) ~~The thermal transmittance for fenestration shall be based on the actual area of the windows and not the standard NFRC 100 size for the applicable product type. It is acceptable to area-weight the modelled fenestration U-value based on the relative proportions of fixed and operable windows and window sizes. It is also acceptable to simplify the calculations by assuming the worst case by using the highest window U-value for all fenestration specified on the project.~~
- (b) If the fenestration or door product is not covered by NFRC 100, the overall thermal transmittance shall be based on calculations carried out using the procedures described in the ASHRAE Handbook – Fundamentals, or Laboratory tests performed in accordance with ASTM C 1363, “Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus,” using an indoor air temperature of $21\pm 1^{\circ}\text{C}$ and an outdoor air temperature of $-18\pm 1^{\circ}\text{C}$ measured at the mid-height of the fenestration or door.

Flashpoint!!!

- Intent of this sentence is not clear as the language is not in complete harmony with the 3 Compliance Paths
- Recently, many are only considering Path C Option 2 Method 2 as the only path to compliance.
- Affects all Part 3 and Part 9 projects across the Province; rejecting previously accepted fenestration compliance paths.
- *In my opinion:*
 - COV EMG governs Building Energy Modelling
 - NFRC + VBBL Notes to Part 10 governs window energy modelling and compliance

Compliance Path 'A' (Prescriptive U-value compliance)

Compliance is demonstrated by means of verifier labels, affixed to factory-assembled fenestration products at the manufacturing location in which each individual fenestration product has a compliant U-value. Compliance is achieved if each product meets the USI-value requirements required by Article 10.2.2.7., at its standard size as identified in NFRC 100 or CSA A440.2.

When one or more products exceed the applicable USI-value in Table 10.2.2.7.(1), compliance Paths B or C may be employed.

Compliance Path 'B' (Labeled / Tested U-value area-weighted average compliance)

Compliance Path 'B' is intended for projects in which all products have U-values simulated at NFRC standard sizes.

Compliance path B requires area-weighting calculations but does not require actual size or project-specific simulation. When one or more products within Table 10.2.2.7.(1) exceed the applicable USI-value, compliance may be demonstrated by calculating the overall average USI-value by means of a tabulated USI x A reporting format. In such a table, the USI-values for the standard size of each product are to be multiplied by the area of the product to determine the average area weighted USI-value of all the products.

Under this option, standard size U-values from test and simulation reports from accredited laboratories may be used for unlabeled products. The U-value report with area-weighting calculations shall be submitted under the seal of a registered professional and may be subject to independent review at the discretion of city staff.

$$\text{Overall } U \text{ value} = \frac{\sum U_1 A_1 + \dots + U_n A_n}{\text{Total Area}}$$

The area-weighting report shall include documentation of verified U-values by means of label reproductions or attached laboratory simulation reports. In the case of NFRC certified products, CPD numbers may be used in place of label reproductions.

Compliance Path 'C' (Simulated U-value compliance)

Compliance path 'C' is intended for projects that use products that cannot demonstrate compliance at standard size by means of labels or accredited laboratory test/simulation reports. Such products include:

- site-assembled windows, doors,
- imported windows and doors not previously tested in Canada,
- curtainwalls and sloped glazing assemblies, and
- factory-assembled curtainwalls and window wall assemblies.

Under this compliance path qualified professionals perform simulations for each Individual Product simulated in accordance with NFRC 100 procedures at the size and configuration defined in NFRC 100 Table 4-3, including the normative table footnotes. Individual Products are defined in NFRC 100 and may be grouped according to NFRC 100 Grouping Rules. Products that require metal reinforcing at project sizes shall be simulated with metal reinforcing. U-values may be reported using one of the following options:

Option 1 - All products conform to Table 10.2.2.7.(1) at standard sizes.

If all products are found to have USI-values that conform to Table 10.2.2.7.(1) at sizes in NFRC 100 Table 4-3, the standard size USI-values may be reported to demonstrate compliance with Article 10.2.2.7.

Option 2 - One or more products do not conform to Table 10.2.2.7.(1) at standard sizes.

Area-weighting the USI-values of products within a U-value group at actual project sizes may be employed to demonstrate compliance for that U-value group.

To comply with Option 2, area-weighted average USI-values may be computed using one of two methods:

Method 1 USI x A table of all products within a U-value group, tabulating frame size, frame area and USI-value for each individual product to compute an overall area-weighted average for all products within the U-value group.

Method 2 USI x A table of USI-values for each individual product at its average project frame size.

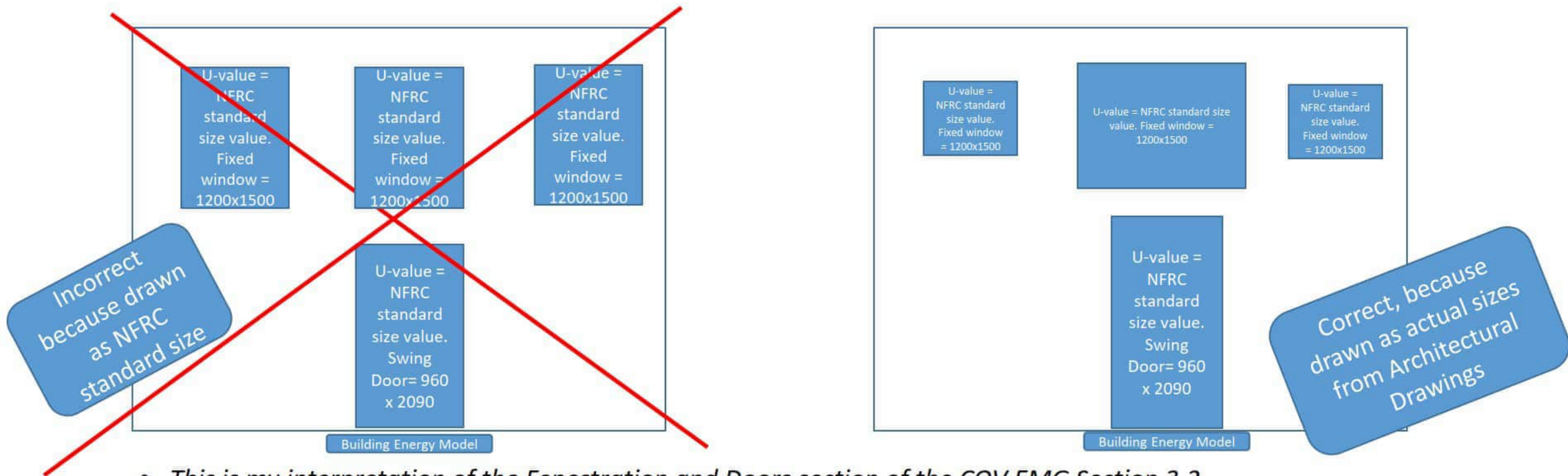
$$\text{Overall } U \text{ value} = \frac{\sum U_{\text{avg}(1)} A_{\text{System } 1} + \dots + U_{\text{avg}(n)} A_{\text{System } n}}{\text{Total Area}}$$

- 3 Compliance paths from Notes to Part 10, VBBL

Path	Time	Cost	Professional?
Path A	Quick check for entire project	One time cost for certification ~\$5000-\$10000 for each type	Not required, certified lab already certified the product
Path B	~2-3 hours for entire project. Mainly quantity takeoffs	One time cost for certification ~\$5000-\$10000 for each type	Professional required as per Notes to Part 10, but typically done by manufacturers themselves.
Path C Option 1 Path C Option 2 Method 1	~6 hours per each type	~\$2000-\$3500 for each type of fenestration	NFRC certified simulators + P.Eng stamp required
Path C Option 2 Method 2	~6 hours per each window/door/pane of glass on the building	~A lot of money and time	NFRC certified simulators + P.Eng stamp required

- 3 Compliance paths from Notes to Part 10, VBBL
- Accuracy increases as you move down from Path A to C, but typically within 10% depending on deviation from standard sizes.
- *In my opinion, the accuracy for Path C Option 2 Method 2 is similar to asking for every speck of dust and every staple to be modelled in a wall assembly.*

Path A Compliance Example



- This is my interpretation of the Fenestration and Doors section of the COV EMG Section 3.2
- The **building energy modeler** should model the fenestration and doors in the **building energy model** according to the **actual window sizes** in the Architectural drawings and not using NFRC standard sizes in the **building energy model**.
- This has nothing to do with **how U-values are reported**. That is entirely governed by Notes to VBBL Part 10, 3 compliance paths. **Building energy modeler** inputs U-value based on reported compliance path U-value.
- In this example, the window manufacturer reports the U-value obtained from the NFRC labels and reports, which was produced by a Certified Lab or Certified Simulation Lab as required by NFRC and complies with Path A of the Notes to Part 10 VBBL. The building energy modeler draws each window as per the actual sizes found in the architectural drawings.

Discussion Points

- NFRC was created based on standardizing U-values, it was never meant for building energy models (unlike Passive House or EU Standards of reporting). Advantages to both as NFRC can be more “accurate” for window modelling but PH/EU is more “built” for building energy models since it uses psi values.
- Manufacturers spend thousands of dollars on each window configuration and combination to obtain NFRC certification from labs. Once obtained, they essentially do not require an engineer to verify the U-value because they have already complied with the “perspective” path. It appears some are starting to disregard this path as meeting compliance (i.e. Path A & B). If it is being disregarded, then these questions arise:
 - 1) What is the point of NFRC certification?
 - 2) What if a certain manufacturer passes NFRC certification at the bid stage because it meets the correct U-value and thus complies with Path A, but then an energy modeler asks for Path C compliance and it fails? The windows would have been built, and the manufacturer loses millions of dollars (this has happened) through no fault of their own but changing criteria and interpretation
- Building Energy Models are not detailed enough and cannot model intermediate mullions.
- Other components are standardized in an building energy model, (i.e. climate data, occupant behavior, temperature setpoints, etc.). Fenestration products also have a standardized method (i.e. NFRC).
- Q: What is the overall TEDI/TEUI effect for being super detailed on Fenestration U-value when it’s only a portion of the entire building envelope and the variation in U-value between compliance paths is only a certain %?
 - Actual % difference between compliance paths and overall TEDI/TEUI effect subject to investigation and research/study.
- Q: Are the 3 compliance paths still legitimate?

Discussion Points

- Subject to Sustainability's decision and review
- Q: What is the City's role in this dilemma?
 - Clarification needed on the intent and scope of COV energy modelling guidelines on fenestration.
 - Need to re-emphasize the legitimacy of the 3 compliance paths on how to report fenestration U-values, if this is the position we take.
 - Release a potential version 3 to tighten up the language in COV EMG

Energy Modelling Guidelines Update to v3

Internal Briefing #1

2022-12-16

Scope

- Update to weather files & estimate impact on TEDI/TEUI/GHGI
- Evaluate impact on TEDI/TEUI/GHGI of updated ventilation standard (to align with next BCBC)
- Standardize assumptions that were open to interpretation (natural ventilation)
- Recommend sensitivity analysis parameters & method for modelling future climate
- Standardize reporting for CEDI

Scope

- Add modelling guidance on refrigerant impact
- Identify ways to encourage further energy efficiency from lighting, elevators, appliances, cx?
- Recommend TEDI adjustment for narrow buildings
- Clarify various application questions
- Clarify GHG reduction methodology for Groups A, B, and F occupancies

Timeline & deliverables

March

- Draft proposed changes
- 2 stakeholder workshops
 - Code compliance (local munis, BSSB, BC Hydro)
 - Energy modellers

April

- EMGs v3 and final report

Budget & Process?

- Estimate \$50-75k
- RFP by invite for 3-4 firms
- Initiate RFP by mid-Jan, award by early Feb

Energy Modelling Guidelines Update to v3

Internal Briefing #2

2024-02-01

Purpose

The EMGs have been in use by thousands of projects across BC since 2017.

- Differences in interpretation have been identified – more consistency is needed
- Some definitions and methodologies need more clarity
- Modelling based on historical weather files (from 1998 to 2014) do not reflect current and predicted future climate
 - May lead to designs that are not appropriate during the building's life cycle
- Overheating evaluation methodology to be updated since active cooling will be required

Goals

- Consistency between modellers – clarify where there are multiple interpretations/ gaps
- Update methodology, not limits – not changing requirements, but clarifying modelling strategy
- No major changes – don't make it impossible for projects that could previously comply
- Provide tools to design for resilience to a changing climate

Summary of Major Changes

- Update to weather files used for energy modelling
 - From CWEC 2016 to PCIC 2020s (future shifted files)
- Refine the methodology for evaluating overheating risk using future climate (PCIC 2050s)
 - Reporting of overheating hours for all buildings
 - Standardize assumptions that were left open to interpretation (occupant behavior, window openings)
- Propose a TEUI & TEDI adjustment for slim and small buildings (issue is faced by COV and BC projects)
- Clarify modelling methodology for building airtightness to reduce confusion between VBBL requirements and modelling
- Clarify modelled floor area and TEDI definitions
- Standardize definition and report of CEDI metric

Engagement Process



Engagement Process

Workshop # 1

April 6, 2023: Open invitation, 1.5-hour workshop led by Focal

Purpose: gain high-level feedback on 8 topic areas proposed for updates

Format: facilitated workshop with audience in 2 groups, each group spending 5 to 10 minutes on each topic

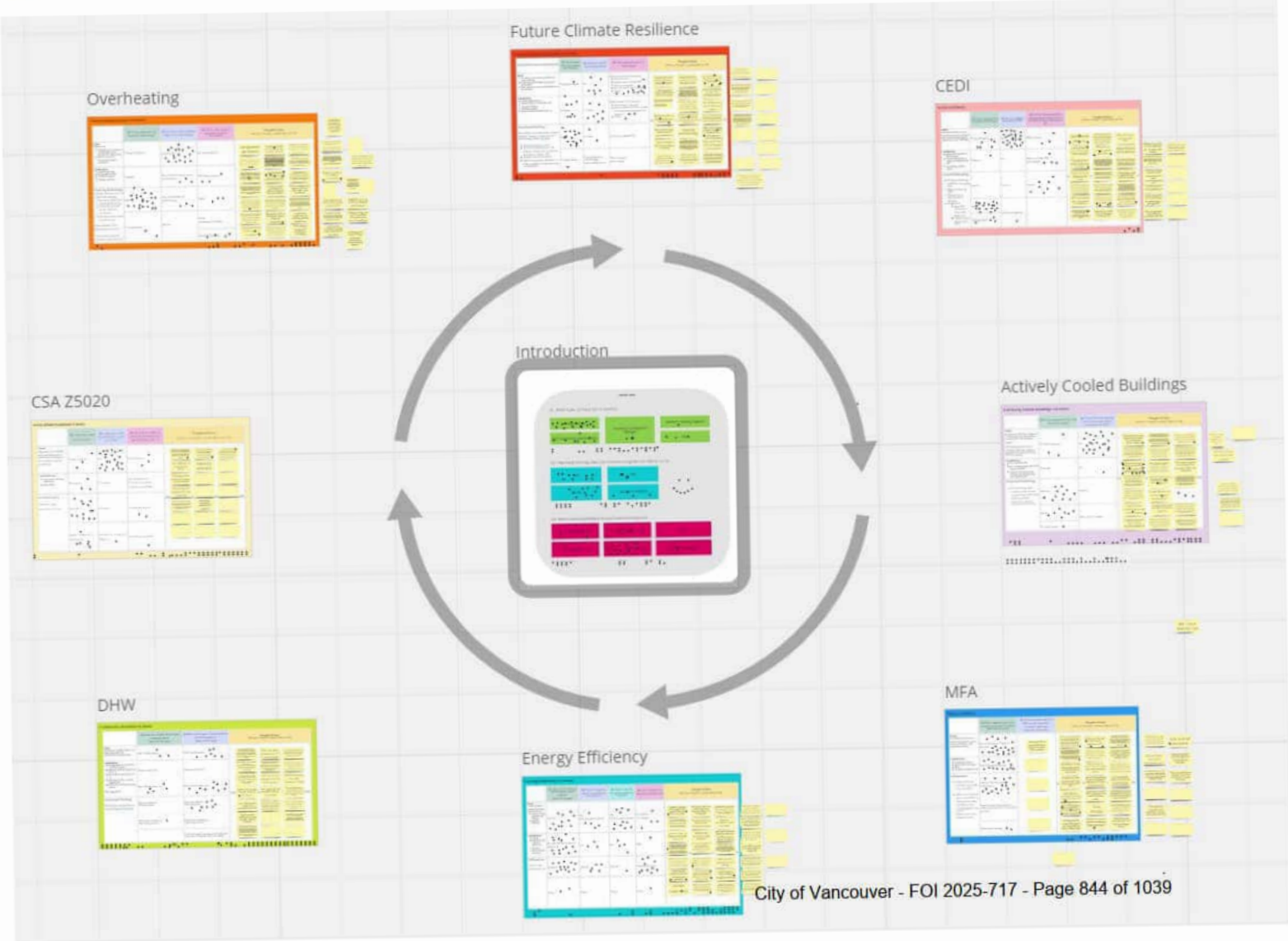
Feedback collection: verbal discussion and 198 comments received through Miro board

Attendance: 45 (energy modellers, development managers, architects/engineers, AHJs, others)

Engagement Process

Workshop # 1 Miro Board

- 198 comments



Engagement Process

Workshop # 2

Oct 13, 2023 – 1.5-hour presentation & discussion led by Focal

Purpose: share key changes proposed in EMGs draft v3.0 in advance of the public comment period

Format: presentation & discussion

Attendance: 98

Engagement Process

6-week public comment period

Oct 13, 2023 to Nov 24, 2023

Purpose: collect feedback on proposed EMGs v3.0 changes and summary of impacts on archetype buildings

Format: survey questions with space for written feedback, and email feedback

Respondents: 22 via survey, 13 via email & 5 phone calls (there may be some overlap in respondents)

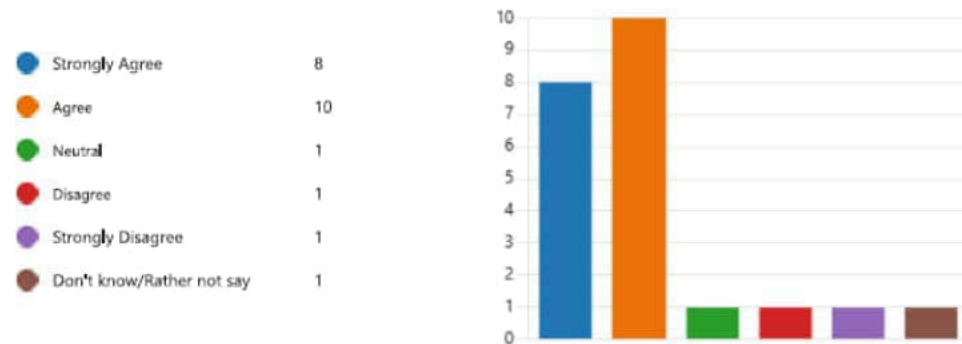
of topic specific comments received: 144

Engagement Process

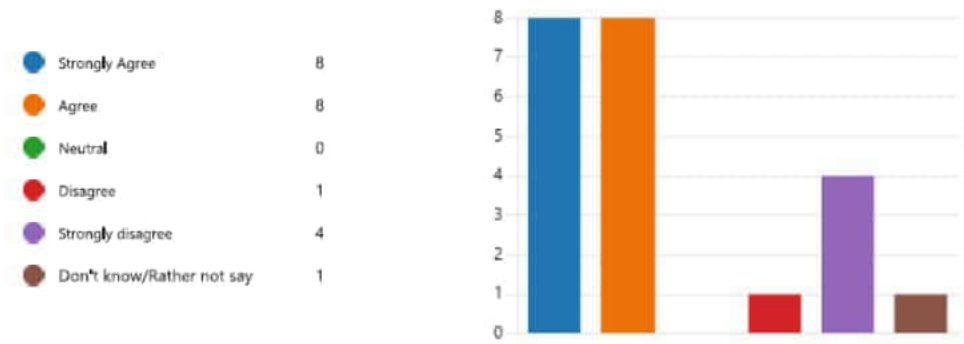
Public comment period – Survey feedback was generally positive

Graphs below show the most positive and the most negative feedback based on topic area.

4. Weather Files (Section 1.5)



6. Resilience (Section 4.2)



Engagement Process

Next steps

- Working through comments and final recommendations
- Final draft of EMGs and project final report to be posted in **April 2024** ahead of 2025 VBBL public comment period in April to May.
- Council approval of EMGs v3.0 and 2025 VBBL ~Sept 2024
- Effective date March 2025

Detailed Changes – Weather files

Proposed change	Reason
<p>Require Future Shifted Weather files:</p> <ul style="list-style-type: none">• PCIC 2020s for energy modelling• PCIC 2050s for overheating analysis	<ul style="list-style-type: none">• CWEC 2016 file based on historical data (1998 to 2014)<ul style="list-style-type: none">• Not representative of current weather• Not representative of future weather under new construction lifespans• Local industry familiar with PCIC files• Alignment with BC Housing Design Guidelines
Impacts	
<ul style="list-style-type: none">• Using future weather files shows TEDI reduction by 0.2 to 3.5.	

Detailed Changes – Overheating Analysis

Proposed change	Reason
<ul style="list-style-type: none">• Use PCIC 2050s weather file to report overheating hours<ul style="list-style-type: none">• Reporting applies to all buildings• Standardized modelling assumptions of occupant behaviour• Clarified guidance on modelling window operable area	<ul style="list-style-type: none">• Refine method to identify overheating risk for all buildings (with cooling systems disabled)<ul style="list-style-type: none">• Promote passive design to improve thermal comfort under future climate conditions, and increase resilience to power outages• No standardized assumptions existed for occupant behavior and window openings
Impacts	
<ul style="list-style-type: none">• Provide a methodology to evaluate effectiveness of passive measures, and identify overheating risk under future climate (2050s)	

Detailed Changes – Slim & Small Buildings

Proposed change	Reason
<ul style="list-style-type: none">• TEUI and TEDI adjustment formula for slim and small buildings	<ul style="list-style-type: none">• Under current guidelines, some building forms (in COV & across BC) cannot meet TEDI requirements due to high envelope-to-floor area ratios – projects have to work out alternative solutions with AHJ (time-consuming)
Impact	
<ul style="list-style-type: none">• Created a pathway for projects to meet TEDI and TEUI requirements using reasonable building envelope design	

Detailed Changes – Corridor Pressurization Adjustment for MURBs

Proposed change	Reason
<ul style="list-style-type: none">• Reduction of adjustment maximum from 10 to 5 kWh/m²a• Removal of GHGI adjustment	<ul style="list-style-type: none">• Adjustment was an interim solution as industry transitions to more airtight buildings and suite-ventilation• Some projects rely on corridor pressurization adjustment of 10 as credit to meet TEDI (instead of pursuing envelope related design changes)
Impact	
<ul style="list-style-type: none">• Reduced TEDI adjustment max to 5	

Detailed Changes – Airtightness modelling

Proposed change	Reason
<p>Removed tiered modelled infiltration rates which depended on TEDI target.</p> <p>Clarify that projects should start with a recommend airtightness target and translate to a modelled infiltration rate.</p>	<ul style="list-style-type: none">• Confusion in industry on airtightness targets for the project based on tiered modeled infiltration rates vs. VBBL limit
Impact	
<ul style="list-style-type: none">• Improved clarity on modelling infiltration and air leakage testing	

Detailed Changes – Clarify Modelled Floor Area

Proposed change	Reason
<p>Clarification of specific exclusions to MFA: <i>crawlspaces, and other non full height spaces not intended for regular access.</i></p> <p>And clarifications of inclusions: <i>This includes unconditioned spaces adjacent to vehicle parking areas.</i></p>	<ul style="list-style-type: none">• Inconsistent MFA calculations in industry which had impact to TEDI compliance based on modellers' interpretation of MFA• Explicitly clarify common areas of confusion
Impact	
<ul style="list-style-type: none">• Improves fairness• No direct impact on compliance	

Detailed Changes – Clarify TEDI

Proposed change	Reason
<ul style="list-style-type: none">Clarify:<ul style="list-style-type: none">Space and ventilation heating of enclosed vehicle parking areas and crawlspaces is to be included in the TEDI unless the heating setpoint is equal to or less than 7°C. This does not affect which areas are included in the MFA.	<ul style="list-style-type: none">Inconsistent calculations which had impact to TEDI compliance based on modellers' interpretation of which energy loads are included in TEDI
Impact	
<ul style="list-style-type: none">Improves fairnessNo direct impact on compliance	

Detailed Changes – Define CEDI

Proposed change	Reason
<ul style="list-style-type: none">• Establish definition for cooling demand	<ul style="list-style-type: none">• Reporting is required but no definition existed previously• Support future regulatory approaches to reduce cooling demand via passive design
Impact	
<ul style="list-style-type: none">• No direct impact on compliance	

Corridor Pressurization Adjustment in energy compliance

April 9, 2024

Charling Li, P.Eng. M.Urb.
Green Building Engineer
City of Vancouver

Unceded Traditional Territories of the Musqueam, Squamish and Tsleil-Waututh Nations

Agenda

1: Brief introductions

2: Background and Context

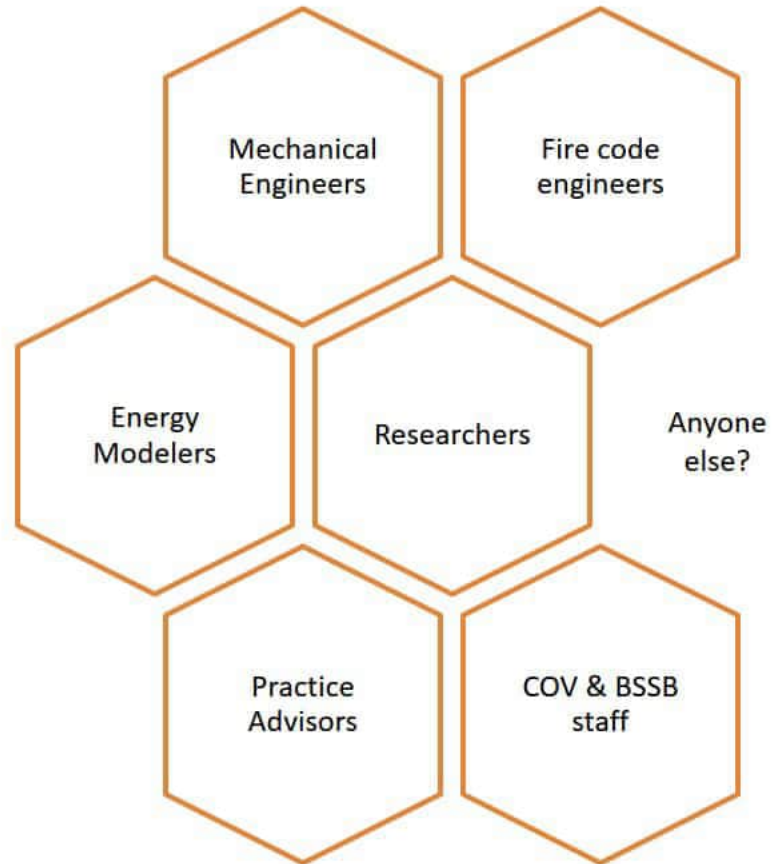
3: Discussion



Link to presentation or provide live feedback:

https://miro.com/app/board/uXjVKXpaL08=?share_link_id=548654619361

Who's here



Background

Designers of new Part 3 residential buildings must meet:

- energy performance limits (VBBL Section 10.2 Energy Efficiency)
- fire and life safety code requirements (VBBL Section 3.2 Building Fire Safety)

We want to understand potential interactions between these sections as we update energy modelling assumptions use for Section 10.2 compliance.

Main questions:

- 1) What is the current state of knowledge about the role of corridor pressurization for odour/smoke control in new multi-family buildings?
- 2) How much energy credit should be allowed for corridor pressurization in meeting energy performance limits?

Context – c. 2016

- Energy and carbon targets (TEDI/TEUI/GHGI) for residential buildings were set assuming ASHRAE 62-2001 ventilation rates (~3-10 CFM/door for corridors)
- Typical MURB designs at the time:
 - Suites pull fresh air through door undercuts and ducted openings via exhaust fan operation and natural ventilation effects (no direct ventilation)
 - No requirements for airtight building envelope or suite compartmentalization
- Industry feedback said much higher volumes were typically supplied via corridors in MURBs (up to 50CFM/door or 24L/s/door) to:
 - Pressurize the building and counter stack effect
 - Suppress movement of odours and pollutants between suites
 - Provide ventilation to corridors and suites
- Incremental TEDI at 50CFM/door can be >20 kWh/m²
- TEDI targets between 15 to 45 kWh/m²

Context – c. 2016

- Interim solution for energy compliance:
 - Adjustment in energy model to allow for energy penalty due to higher than ASHRAE ventilation rates supplied to corridors
 - Adjustment is capped at 10 for TEDI and TEUI
 - Intent to update this adjustment as industry changes design strategies for MURBs

$$TEDI \text{ Adjustment} = \frac{HDD \times ((0.029 \times \#Suites \times (L/s/door)) - (0.0073 \times Corridor \text{ Area}))}{MFA}$$
$$TEUI \text{ Adjustment} = TEDI \text{ Adjustment}$$

- Adjustment is currently used by Vancouver and BC Step Code projects
- Toronto Green Standard and Zero Carbon Buildings Standard do not have this adjustment

Context – c. 2024

- Data from current projects: 50% of projects are supplying 20 CFM/door or less in corridors, and 45% between 20-30 CFM/door
- Typical MURB designs now:
 - Suites have direct ducted ventilation (typically in-suite HRVs, sometimes central HRV)
 - Building envelope airtightness testing is required (COV and Step Code)
 - Suite compartmentalization testing is required (COV)
- Current TEDI target between 25 to 40 kWh/m²

s.13(1)



Context – c. 2024

- Proposal: reduce current TEDI and TEUI adjustment in energy model from 10 to 5 to account for changes in design
- Applicability:
 - Vancouver projects only
 - Province will decide whether the changes in corridor adjustment will apply for BC projects
- There is concern that reducing the corridor adjustment will motivate designers to reduce corridor air volumes below what may be needed for smoke control

Limits to smoke movement

New Div B 3.2.6.2.(6) added in VBBL 2019 (following BCBC 2018 and NBC 2015)

6) Except as provided in Article 3.2.4.12. or where there is a conflict with other smoke control measures in the *building*, air-handling systems used to provide make-up air to *public corridors* serving *suites* in a Group C *major occupancy* shall not shut down automatically upon activation of the fire alarm so as to maintain corridor pressurization.

Intent: “To limit the probability that smoke from a fire in a suite will spread into the public corridor, which could lead to the spread of fire beyond its point of origin and delay evacuation or impede moving to a safe place.”

Feedback from NBC 2015 code change proposal:

- based on outdated data (1961-1988) and likely un-sprinklered buildings
- For sprinklered high-rises, no floor or zone control ventilation design practices are required

Corridor pressurization & smoke control

Unknowns:

- Is corridor pressurization required for smoke control?
- If yes, how much pressure differential (air volumes?) is needed between corridor and suites?

Knowns:

- Vancouver requires fully-sprinklered multi-family buildings

Discussion Question

- 1) **What is the current state of knowledge about the role of corridor pressurization for odour/smoke control in new multi-family buildings?**
- 2) **How much energy credit should be allowed for corridor pressurization in meeting energy performance limits?**

Given:

- current designs for more airtight and compartmentalized construction
- pressurization needed for smoke control is unclear
- actual pressure differentials between suites and corridors are highly variable
- air volumes/pressurization needed for pollutant/odour control is unclear



PS20230002 - SERVICES CONTRACT

City of Vancouver (the “City”)

having the following address:

453 West 12th Avenue

Vancouver, British Columbia, Canada

V5Y 1V4

Tel Number: 604-871-6833

Email: charling.li@vancouver.ca

Name of City Project Manager: Charling Li

AND: Focal Engineering Inc. (the “Contractor”)

having the following address:

467 John Street

Victoria, British Columbia, Canada

V8T 5H1

Tel Number: 604-842-7893

Email: susan@focaleng.com

Name of Contractor Contact: Susan MacDougall

This contract for services is comprised of this cover page, the following parts A, B, C, D and E, the attached Services Contract Terms and Conditions, and any other attachments, schedules, appendices or annexes expressly referred to in the aforementioned parts A, B, C, D and E, and the signature blocks following Part F below. By signing below, the City and the Contractor hereby agree to be bound by the terms of this contract.

PART A - SERVICES:

To update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025.

The Services are further described in Schedule A.

Start date for the Services: March 1, 2023 (the "Start Date")

The Contractor agrees to complete the Services by: July 10, 2023

PART B - FEES AND EXPENSES:

Billing Date(s): See Section 20 of the Services Contract Terms and Conditions

Fees: \$73,402.00 (Includes PST but excludes GST.)

Expenses: Not reimbursable (included in fees)

Definitions:

Maximum Amount of Fees and Expenses (the "Maximum Amount"): \$73,402.00

"GST" means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time.

The fees and expenses are further described in Schedule B.

"PST" means the provincial sales tax payable and imposed pursuant to the Provincial Sales Tax Act (British Columbia), as amended or replaced from time to time.

PART C: APPROVED SUBCONTRACTORS

NONE

PART D: INSURANCE

Without limiting any of its obligations or liabilities under this Services Contract, the Contractor will obtain and continuously carry and will cause its subcontractors to obtain and continuously carry during the term of the Services Contract at its own expense and cost, the following insurance coverages with minimum limits of not less than those shown in the respective items set out below:

- (a) Commercial general liability insurance with a limit of not less than \$2,000,000 per occurrence and a deductible of not more than \$5,000 or other such amounts as the City may approve from time to time, protecting the Contractor and the Contractor's personnel against all claims for bodily injury including death, personal injury, advertising liability, products liability, sudden & accidental pollution, completed operations, or property damage or loss, arising out of the operations of the Contractor or the actions of the Contractor or the Contractor's personnel. The policy will carry blanket contractual liability coverage, include a cross-liability clause in favour of the City, and will name the City and the City's officials, officers, employees and agents as additional insureds;
- (b) All-risks property insurance covering the Contractor's property of every description containing a provision in which the insurer waives all rights which it may acquire by payment of a claim to recover the paid amount from the City or its officials, officers, employees or agents; and

The Contractor and each of its subcontractors will provide at its own cost other lines of insurance coverages, endorsements, or increased limits of insurance as deemed necessary by the City and as a reasonable and prudent contractor would require to protect their operations or performance of services.

All insurance policies required by this Services Contract shall be with insurers duly authorized to carry on business in the Province of British Columbia, in a form and in amounts satisfactory from time to time and acceptable to the City's Director of Risk Management.

The required insurance shall not be cancelled or endorsed to reduce the limits of liability without thirty (30) days' written notice by registered mail to the City. Should the policy be endorsed to restrict coverage midterm, written notice of such restriction will be provided by registered mail to the City no later than the effective date of change; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply. Notice must identify the contract title, number, policy holder, and scope of work.

The Contractor's insurance policy (policies) shall be primary with respect to all claims arising out of the operations of the Contractor. Any insurance or self-insurance maintained by or on behalf of the City or its officials, officers, employees, or agents will be excess of the Contractor's insurance and will not contribute to it.

Neither the providing of insurance by the Contractor in accordance with this Agreement, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing will be held to relieve the Contractor from any other provisions of the Services Contract with respect to liability of the Contractor or otherwise.

Prior to the Start Date, the Contractor will provide the City with evidence of all required insurance in the form of a certificate of insurance satisfactory to the City. The certificate of insurance will identify the contract title, number, policyholder, and scope of work. The Contractor will provide proof of insurance, in the form of a certificate of insurance or certified copies of all insurance policies to the Manager, Contracts and Administration at any time immediately upon request.

The Contractor will provide in its agreements with its subcontractors clauses in the same form as in this Part D. Upon request, the Contractor will deposit with the City detailed certificates of insurance for the policies it has obtained from its subcontractors and a copy of the applicable insurance clauses from its sub-contract agreements.

PART E: ADDITIONAL TERMS{ NONE

The following are integral parts of this Services Contract:

- SCHEDULE A - SERVICES;
- SCHEDULE B - FEES AND EXPENSES and
- SCHEDULE C- CONTRACTOR'S PROPOSAL

The parties hereto have duly executed this Contract as of the 28th day of February, 2023.

SIGNED AND DELIVERED on behalf of the City by its authorized signatory(ies):

s.15(1), s.22(1)

Per: _____

Paul Bruce, Manager, Contracts & Administration,
Supply Chain Management

SIGNED AND DELIVERED on behalf of the Contractor by its authorized signatory(ies):

s.15(1), s.22(1)

Per: _____

Name and Title

SERVICES CONTRACT TERMS AND CONDITIONS

A. CONTRACTOR'S OBLIGATIONS

1. **Performance of Services.** The Contractor agrees to provide the City with the services described in PART A (and in any schedule referred to therein), including, without limitation, and to the extent not expressly described in PART A (or in any such schedule), all services necessary or incidental to the completion of the services contemplated and described therein (the "Services"), all in accordance with the Services Contract (this "Contract"). The Contractor must provide the Services commencing on the Start Date described in PART A and in accordance with the delivery schedule (if any) specified in PART A (or in any schedule referred to therein), regardless of the date of execution or delivery of this Contract. The Contractor must comply with the City's instructions in performing the Services, but unless otherwise specified herein, the Contractor shall at all times retain control over the manner in which those instructions are carried out.
2. **Provision of Service Inputs.** Unless otherwise specified herein, the Contractor must supply and pay for all labour, materials, permits and approvals (including from any relevant government authority) necessary or advisable to provide the Services.
3. **Standard of Care and Applicable Laws.** The Contractor must perform the Services to the standard of care, skill, and diligence prescribed herein, or where not prescribed herein, to the standard customarily maintained by persons providing, on a commercial basis, services similar to the Services, and in accordance with all statutes, regulations, by-laws, codes, rules, notices, orders, directives, standards and requirements of every competent federal, provincial, regional, municipal and other statutory authority applicable to the Contractor and its personnel and the Services.
4. **Warranty.** Without limitation to any additional warranties provided by the Contractor, whether indicated on the face of this contract or otherwise provided, the Contractor warrants that: (a) all goods, provided by the Contractor in connection with its performance of the Services ("Goods"), shall be of merchantable quality and free from defects in workmanship and materials; (b) all Goods shall strictly conform to applicable samples, specifications and drawings; (c) all Goods and Services shall be fit for the purpose intended by the City; (d) all Goods shall be free and clear of all liens, charges and encumbrances; (e) the Goods and Services shall comply with the standards set forth by applicable federal, provincial, municipal and industry regulatory agencies; (f) the shipping and handling of any hazardous material will be made in accordance with all applicable laws and regulations; and (g) the Goods and Services shall comply with all applicable environmental protection laws and regulations.

Unless a longer warranty period is specified on the face of this Contract or is otherwise provided, the foregoing warranty shall be valid for one year from the date of acceptance of the Goods and Services by the City. If at any time prior to the expiration of any applicable warranty period, any weakness, deficiency, failure, breakdown or deterioration in workmanship or material should appear or be discovered in the Goods and Services furnished by the Contractor, or if the Goods and Services do not conform to the terms and conditions of this Contract, the City may at its option (a) require the Contractor to promptly replace, redesign or correct the defective and non-conforming Goods and Services at no expense to the City, or (b) the City may replace or correct the defective Goods and Services and charge the Contractor with all expenses incurred by the City. The Contractor agrees to indemnify and save harmless the City, its officials, officers, employees, assigns, agents, clients and the public from any liability, loss, cost and expense arising either directly or indirectly, from breach of any warranty given by the Contractor hereunder.

5. **Contractor Personnel.** The Contractor must ensure that all persons it employs or retains to perform the Services are competent to perform them and are properly trained, instructed, and supervised, and that all such persons comply with the provisions of this Contract.
6. **Reporting.** The Contractor must, upon the City's request, fully report to the City on all work it does or has done in connection with providing the Services.
7. **Deliverables.** As a result of or as part of providing the Services, the Contractor may receive, create, produce, acquire or collect items including, without limitation, products, goods, equipment, supplies, models, prototypes and other materials; information and data; reports, drawings, plans, designs, depictions, specifications and other documentation (collectively, "Deliverables"). Deliverables do not include items that are: not required to be produced by the Contractor or supplied to the City as part of or together with the Services unless the City pays for such items; or specified in this Contract as being excluded from the Deliverables category; or items which pre-existed the effective date of this Agreement that are owned by a third party or that are used by the Contractor as part of the services provided to any of its other customers. All Deliverables will be owned solely by the City unless otherwise expressly provided herein and the City will have the complete right to use and deal with the Deliverables for its own benefit in any way it sees fit without limitation. The Contractor waives, in favour of the City, all moral rights in the Deliverables, transfers to the City, free of all liens and encumbrances, ownership of each Deliverable, and assigns all of its world-wide present and future rights, title and interest in and to each Deliverable, including copyright, effective as of the date of creation or acquisition of such Deliverable. The Contractor will permit the City to inspect and copy all Deliverables.
8. **Confidentiality.** The Contractor acknowledges that, in performing the Services required under this Contract, it may acquire information about matters which are confidential to the City, which information is the exclusive world-wide property of the City or its suppliers or citizens, as the case may be. The Contractor undertakes to treat as confidential all Deliverables and all information received by reason of its position as Contractor and agrees not to disclose the same to any third party either during or after the performance of the Services under this Contract, without the City's express prior written consent.
9. **Insurance.** The Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, the insurance coverage (if any) described in PART D (including the type and form of policy, the coverage amounts, and the amount of deductible). If no insurance coverage is specified in PART D, the Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, such insurance as would be obtained by a prudent consultant or contractor providing services similar to the Services. The Contractor must provide written proof of such insurance coverage upon the written request of the City.
10. **WorkSafeBC.** The Contractor agrees that it will procure and carry and pay for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or services performed in fulfilling this Contract have been paid in full. The Contractor will provide the City with the Contractor's and each subcontractor's WorkSafeBC registration number and clearance letters from WorkSafeBC confirming that the contractor and each subcontractor is in good standing with WorkSafeBC prior to the City having any obligation to pay monies under this Agreement.

Whenever the Contractor is required or permitted to perform any Services on any City sites, the Contractor is now appointed and now accepts appointment as the "prime contractor" in connection with such Services and will fulfil its obligations as Prime Contractor in accordance with the Workers Compensation Act (British Columbia), and the regulations thereunder, and the Contractor shall comply with all applicable health and safety laws.

11. **City Business Licence.** The Contractor will maintain a valid City of Vancouver business licence in good standing throughout the duration of this Contract.
12. **Resolution of Disputes.** This Contract will be governed by the laws of British Columbia and the parties now irrevocably attorn to the exclusive jurisdiction of, and agree to submit all disputes to, the courts of British Columbia for resolution. The Contractor shall continue performance of its obligations under this Contract notwithstanding the existence of a dispute.
13. **Independent Contractor.** This Contract is a contract for services and neither the Contractor nor the Contractor's personnel or permitted subcontractors, are, or deemed to be, partners, appointees, employees or agents of the City. The Contractor will not represent to anyone that the Contractor has any authority to bind the City or that the Contractor is an employee or agent of the City.
14. **No Assignment or Subcontracting.** The Contractor will not assign or subcontract (other than to persons listed in PART C (or a schedule referred to therein)), either directly or indirectly (including, without limitation, by way of any transfer of control of the shares or ownership interests in the Contractor), this Contract or any right or obligation of the Contractor under this Contract, without the prior written consent of the City, which consent may be arbitrarily withheld. No assignment or subcontract, whether consented to or not, relieves the Contractor from any obligations under this Contract. The Contractor must ensure that any assignee or subcontractor fully complies with this Contract in performing the Services and nothing in this Contract creates any contractual relationship between a subcontractor and the City.
15. **Conflict of Interest.** The Contractor must not provide any services to any person in circumstances which, in the City's reasonable opinion, could give rise to a conflict of interest between its duties to that person and its duties to the City under this Contract.

16. Release and Indemnification

a. Release

The Contractor now releases the City and the City's personnel from all losses including those caused by personal injury, death, property damage or loss, and economic loss, arising out of, suffered or experienced by the Contractor or the Contractor's personnel in connection with their performance of the Services.

b. Acceptance "As Is"

In undertaking the Services, the Contractor acknowledges that it has inspected the City's site(s), agrees to accept the site(s) "as-is" and undertakes to take all precautions necessary to ensure the safety of all the Contractor's personnel.

c. Indemnity

Despite any insurance which may be placed by the City, the Contractor now agrees to indemnify and save harmless the City and its officials, officers, employees, agents, successors, assigns and authorized representatives (in each case, an "Indemnified Party") from and against all costs, losses, claims, damages, actions and causes of action ("Claims") that an Indemnified Party may sustain, incur, suffer or be put to at any time either before or after the completion of the Services or sooner cancellation of this Contract, that arise out of any act or failure to act of the Contractor or the Contractor's personnel, permitted assignees or subcontractors in connection with the performance of this Contract, including any Claims that arise out of or are in any way related to unpaid WorkSafeBC assessments or the failure to observe safety rules, regulations and practices of WorkSafeBC, excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or negligent acts of an Indemnified Party.

d. Separate from Other Remedies and Rights

Nothing in this Contract (including this indemnity) will affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

e. Survival of Release/Indemnity

This Section 16 will survive the expiry or sooner termination of this Contract.

B. CHANGES TO SERVICES

17. **Changes.** The City may, at any time and from time to time and without invalidating this Contract, require a change to the Services and/or to the schedule for the delivery of the Services. Should the Contractor consider that any such request or instruction constitutes a change warranting amendment of the Maximum Amount, another price or the schedule for the Services set forth in the Contract, the Contractor must advise the City in writing prior to acting on any such request or instruction, and in any event within five (5) City of Vancouver business days of such request or instruction. In that case, the Maximum Amount, other price and/or schedule will be adjusted, if/as agreed to by both parties in writing, and failing agreement, if/as the City may determine, acting reasonably. Failing any such adjustment, the Services provided pursuant to the request or instruction will be deemed to be included within the prices specified herein, and to be subject to the schedule prescribed herein.

18. **Changes to Key Personnel.** The City may from time to time request reasonable changes to the key personnel of the Contractor engaged in performing the Services, and the Contractor shall comply with any such request. The Contractor shall not change any of such key personnel without the prior written approval of the City, which approval will not be unreasonably withheld.

C. PAYMENT

19. **Payment of Fees and Expenses.** In consideration for the satisfactory performance of the Services, The City will pay to the Contractor the fees specified in PART B (as supplemented by any schedule referred to therein), subject to this Section C. In addition, if the parties have specified in PART B that the Contractor's expenses are reimbursable in accordance with this Contract, the City will reimburse the Contractor for all expenses that: (i) are approved by the City in writing (in accordance with the City's existing policies and procedures for expense reimbursement) prior to their being incurred by the Contractor; (ii) are necessary, in the opinion of the City, to perform the Services; and (iii) are supported by proper receipts or other documentation satisfactory to the City (acting reasonably), provided always that the City reserves the right to make arrangements through its service providers for any flights and/or accommodations required by the Contractor in connection with its performance of the Services. If a "Maximum Amount" is specified in Part B, then the City is not, and shall not be, obliged to pay to the Contractor more than such Maximum Amount on account of aggregate fees (and, if applicable, expenses). Payment terms are "net 30 days" from the date of receipt of a valid invoice.

20. **Invoicing.** The Contractor will, by the 25th day of each month, provide to the City's Project Manager (named on the cover page of this Contract) a draft invoice with an attached detailed account of all charges to be claimed by the Contractor for the preceding month. The City's Project Manager shall review the draft, raise any concerns with the Contractor within ten working days and, after settlement of any issues (in the Project Manager's discretion), approve the draft invoice. The Contractor, if so requested, will meet with the City's Project Manager to expedite and settle the draft invoice. The Contractor will submit its final invoice, as per the approved draft invoice, to the City of Vancouver, Attention: Accounts Payable, by email to APInvoice@vancouver.ca. Each invoice must contain:

- Contractor name, address and telephone;
- City purchase order number;
- Name of the City's Project Manager;
- Invoice number and date;
- Details of any applicable taxes; and
- Tax registration number(s).

21. **Builders Lien Act.** If the Services to be performed under this Contract are subject to the holdback requirements set out in the *Builders Lien Act* (British Columbia) (the "Lien Act"), the City will withhold and discharge the required holdback amounts in accordance with the requirements set out in the Lien Act.

22. **Discharge of Liens and Withholding.** The Contractor will, if applicable, make payment and take all other steps which may be necessary so that no lien claims, including lien claims made under the Lien Act, are made in connection with the provision of the Services, and that the compensation payable to the Contractor by the City is not subject to attachment for debt, garnishing process or otherwise. In the event that any lien is filed in connection with the provision of the Services at any court or land title office, the Contractor shall immediately cause such lien to be discharged. The City may withhold from any payment due to the Contractor an amount sufficient to indemnify the City against any lien claim that could arise in connection with the provision of the Services, until such time as the lien has been discharged or other arrangements to satisfy such lien have been made by the Contractor.

23. **Withholding for Non-Residents.** If the Contractor is a non-resident of Canada, the City may withhold from any payment due to the Contractor such amounts as may be required to be withheld pursuant to the applicable provisions of the Canada *Income Tax Act* (the "ITA"). Any amount so withheld shall be remitted to the Receiver General for Canada or otherwise dealt with by the City strictly in accordance with the provisions of the ITA.

24. **Record Keeping.** The Contractor must maintain, and shall cause any subcontractors to maintain, time records and books of account, invoices, receipts, and vouchers of all expenses incurred, in form and content satisfactory to the City. The City or any of its authorized representatives will, for the purposes of audit and examination, have access and be permitted, upon reasonable notice to the Contractor, to inspect such records for review, copy and audit at any time and from time to time while this Contract is in effect and for a period of three years after the expiry or termination of this Contract for any reason.

25. **Currency.** Unless otherwise specified in this Contract, all references to money are to Canadian dollars.

26. **Electronic Funds Transfer.** The City expects to make payments by electronic funds transfer and the Contractor must provide banking information to the City in order to permit this.

D. GENERAL

27. **Time for Performance.** Time is of the essence in this Contract.
28. **Amendments.** No modification of this Contract is effective unless it is in writing and signed by all the parties.
29. **Entire Agreement.** This Contract constitutes the entire agreement between the parties as to performance of the Services, and replaces and supersedes any other agreements, correspondence or other discussions between the parties, whether or not any of the foregoing have been reduced to writing.
30. **Conflict.** If there is a conflict between a provision of a schedule to this Contract and the terms and conditions of this Services Contract, the provision in the relevant schedule is inoperative to the extent of the conflict unless it states that it operates despite a conflicting provision of this Contract.
31. **Severability.** If any provision of this Contract is determined to be void or unenforceable, in whole or in part, it shall not be deemed to affect or impair the enforceability or validity of any other provision of this Contract, and any such void or unenforceable provision may be severed from this Contract without affecting the remainder of the Contract.
32. **Termination.** The City may terminate this Contract:
- a. Upon failure of the Contractor to comply with this Contract, immediately on giving written notice of termination to the Contractor, or
 - b. For any other reason, on giving at least 10 days' written notice of termination to the Contractor.

If the City terminates this Contract under paragraph b. above, the City must pay the Contractor that portion of the fees and expenses described in PART B which equals the portion of the Services that was completed to the City's satisfaction before termination. That payment discharges the City from all liability to the Contractor under this Contract. If the Contractor fails to comply with this Contract, the City may terminate it and pursue other remedies as well.

33. **Binding Effect.** This Contract shall be binding on the Contractor's successors and permitted assigns and shall enure to the benefit of any successors and assigns of the City.
34. **Voluntary Agreement.** The Contractor acknowledges and declares that it has carefully considered and understood the terms of this Contract, that it has either consulted legal counsel or waived such right, and that it is executing this Contract voluntarily.
35. **Further Assurances.** The Contractor agrees that upon any reasonable request of the City, the Contractor will make, do, execute or cause to be made, done or executed all such other acts as may be required to more fully give effect to the terms and conditions hereof.
36. **Headings.** The headings used in the Parts and sections of this Contract are for convenience of reference only, and shall not operate to expand, modify or interpret the language therein.
37. **Counterparts.** This Contract may be executed in one or more counterparts, including by facsimile or other electronic transmission, and each of such counterparts shall be deemed to be taken together to constitute one and the same original document.
38. **Additional Terms:** The additional terms set out in Part E (or in any schedule referred to therein) apply to this Contract.

END OF TERMS AND CONDITIONS OF SERVICES CONTRACT

SCHEDULE A - SERVICES

2023 Energy Modelling Guidelines Update

Schedule

The anticipated delivery date of draft results is: Monday, May 15th, 2023

The anticipated dates of 2 proposed workshops are: Week of June 5th, 2023

The anticipated delivery date of final results is: Monday July 10th, 2023

Background

The Zero Emissions Building Plan (ZEBP¹) seeks to reduce the operational emissions of new construction in Vancouver to zero by 2030. Changes to the Vancouver Building By-law (VBBL) were approved in May 2022 to reduce greenhouse gas intensity (GHGI) targets consistent with zero emissions heating and hot water equipment for Part 3 new construction, as well as more stringent targets on climate resilience. The City of Vancouver's Energy Modelling Guidelines (EMGs) version 2.0 needs to be updated to consolidate feedback and new knowledge that has emerged since the release of version 2.0 in July 2018.

The EMGs are used by projects to demonstrate compliance to the energy and emissions limits in the Vancouver Building By-law and is also referenced by the BC Building Code in the application of the Energy Step Code (ESC) for Part 3 buildings. While the focus of the update will be to reflect Vancouver's context, proponents are encouraged to consider the implications of these updates to users of the provincial ESC and lead discussions on these implications at the stakeholder workshops (see Deliverables).

Intent

The intent of this scope of work is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025².

Scope

Throughout the delivery of this scope of work, the proponent should consider applicability or constraints of the common energy modelling software used by modelling professionals in BC for Part 3 large new buildings. Proposed modelling methodologies should work for these modelling software; otherwise provide a recommendation on whether specific software should no longer be used for the purposes of compliance modelling for VBBL or ESC.

It is up to the proponent to propose the necessary methodology to arrive at and justify each recommended change to the EMGs based on the scope items outlined below. Some recommendations may be based on professional judgment and experience of the proponent, while others may require some energy modelling effort to arrive at the recommended approach.

This scope of work is not intended to be an extensive modelling exercise. The energy modelling scope item 14) is meant to provide an overall summary to understand the impact to energy and emissions metrics based on by major impacts such as updated weather files, changes in DHW assumptions, and ventilation standards, etc. Proponents are expected to

¹<https://vancouver.ca/files/cov/zero-emissions-building-plan.pdf>

² <https://council.vancouver.ca/20220517/documents/R1a.pdf#page=34>

have access to recent and relevant completed energy models of Part 3 new buildings of different sizes to draw from for the purposes to arriving at the recommendations.

The scope of work consists of the following needs:

1) Weather files

- a) Recommend a change to the standard weather file for demonstrating compliance to VBBL from CWEC 2016 to CWEC 2020 or to another weather file. The intent is to reflect best currently available information to demonstrate compliance to VBBL energy & emissions limits at the time of design.
- b) Recommend standard weather file(s) for completing sensitivity analysis under future climate conditions (e.g. specify climate files with time-scale and Representative Concentration Pathway, or source of climate files, etc.) or the use of Reference Summer Weather Years³. See also Section 5).

2) Domestic hot water

- a) Provide recommendations on whether to include the following changes as per the recommendations of the report “Calibrating the Zero Emissions Building Plan and BC Energy Step Code”⁴
 - o increasing peak load assumption to 0.0021L/s/person (Section 3.1.4.1 of the report)
 - o adopting a seasonal multiplier to DHW use (Section 3.1.4.2)
 - o adopting a recirculation DHW heat loss factor (Section 3.1.4.3)
 - o adopting a multiplier for non-submetered DHW (Section 3.1.4.5)
- b) Suggest any other recommendations to improve modelling of domestic hot water use, if any.

3) Ventilation Standard

Provide advice on the implications of the changes to TEDI, TEUI, GHGI and CEDI using ventilation rates in ASHRAE 62.1 -2016 Ventilation and Acceptable Indoor Air Quality as opposed to current VBBL referenced ASHRAE 62.1-2001 for ventilation.

4) Overheating analysis for Passive Cooled Buildings

Recommend standardized assumptions for estimating the number of overheating hours for passively cooled buildings (section 4 of the EMGs) for the purposes of demonstrating compliance with overheating limits within VBBL and ESC. The proposed methodology or assumptions should apply to common natural ventilation and other passive cooling strategies and be simple to apply across different project designs and conditions. Include guidance on the following:

- a) Modelling natural ventilation and shading – for example, how window/patio door opening areas are calculated, how much airflow through openings, schedules of operation, external or internal operable shading.
- b) Occupant assumptions such as clothing, metabolic rate, local airspeed, etc.
- c) Other modelling assumptions such as thermal massing
- d) Recommend whether to require the calculation of operative temperature instead of dry bulb temperature in thermal comfort/overheating analysis based on ASHRAE 55 Section 5.3. Include any technical or software constraints associated with this recommendation.
- e) Recommend changes to the values in Table 4 “Acceptability Limits for Naturally Conditions Spaces in Vancouver” in Section 4 of the EMGs to a standard minimum value across all month, with the intent to accommodate projects outside of Vancouver conducting overheating hours analysis for ESC compliance.

³ <https://nrc-publications.canada.ca/eng/view/object/?id=abcd0186-37f3-4051-b752-688f04b7063c>

⁴ Crosby, S. 2019. “Calibrating the Zero Emissions Building Plan and BC Energy Step Code” Report for the Greenest City Scholars Program. https://www.researchgate.net/profile/Sarah-Crosby-2/publication/336654063_Calibrating_the_Zero_Emissions_Building_Plan_and_BC_Energy_Step_Code/links/5e583818a6fdccbeba079aa4/Calibrating-the-Zero-Emissions-Building-Plan-and-BC-Energy-Step-Code.pdf

5) Resilience to future climate and shock events

- a) For buildings with partial cooling or no active cooling: recommend a methodology for sensitivity analysis of how the number of overheating hours will shift in the future, such as time period to be modelled, the weather files to be used, etc.
- b) For buildings with active cooling: recommend a methodology for sensitivity analysis of overheating hours in the event of a power outage. Suggest a scenario and set parameters for analysis such as the duration of the power outage, the time period to be modelled, the weather files to be used, the number of overheating hours above a thermal safety threshold temperature, etc. Suggest an approach to encourage design teams to explore additional ways to reduce overheating hours during a power outage with the intent to improve the passive survivability of the building.
- c) Recommend a standard methodology and weather files to be used to analyze and report on how peak cooling and heating loads, TEDI, TEUI, GHGI and CEDI change between current and future climate scenarios. Include recommendations on how this information may be presented in the Energy & Emissions Design Report.

6) Cooling Energy Demand Intensity

Establish a standard methodology for calculating cooling energy demand intensity applicable to all building designs including those with full, partial or no mechanical cooling systems.

7) Refrigerant impact – GHGI-R

Projects will be required to account for the greenhouse gas impacts of refrigerants (GHGI-R) in the whole-building GHGI limit as of January 2025. Draft a new guidance section in the EMGs on GHGI-R that includes the following:

- a) Provide recommendation on incorporating GHGI-R estimates in early design for whole building GHGI compliance, based on existing available resources⁵. Reference existing GHGI-R calculation methodology from the Green Buildings Policy for Rezoning – Process and Requirements (amended June 14, 2019)⁶ to the EMGs and recommend updates to the methodology as necessary.
- b) Recommend whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume of refrigerant (nominally 225g)⁷ or a specific cooling capacity (19kW)⁸, or align with any other relevant standards or regulations.
- c) Update the definition of GHGI to include refrigerant impact.

8) Compliance for actively cooled buildings

As of January 2025, dwelling units within Part 3 buildings will be required to have active mechanical cooling capable to maintaining an indoor air temperature of 26°C with windows closed. Provide a recommendation on how compliance may be demonstrated through energy modelling. For example, the weather files and/or peak design condition to be used, the time period to be modelled, any mechanical system details or other compliance information or metrics to be provided by the design and modelling team, etc. Provide insight on any changes to the design and modelling teams' workflow that may be required to demonstrate compliance.

9) Form Factor for slim buildings' TEDI targets

Propose an adjustment factor for small and/or narrow buildings where TEDI targets may be difficult to achieve due to its form factor.

10) Energy efficiency recommendations

⁵ <https://vancouver.ca/files/cov/refrigerant-impact-ghgi-study.pdf>

⁶ <https://vancouver.ca/files/cov/bulletin-green-buildings-policy-for-rezoning-2019-june14.pdf>

⁷ Based on LEED v4 Credit Enhanced Refrigerant Management

⁸ Based on Zero Carbon Buildings v3

Provide technical and policy recommendation on the following items with the intent to further encourage selection of more energy efficient options:

- a. Appliances: should the current credit for EnergyStar appliances for TEUI continue, or should the default modelling assumptions for these appliances be adjusted to Energy Star requirements?
- b. Lighting – is an update to modelling assumptions for lighting necessary and are there other mechanisms to drive better more energy efficient lighting design
- c. Elevators – propose a revision to the current assumption on elevator load or an alternative modelling method to encourage the selection of more efficient elevators
- d. Laundry appliances – does the current assumptions on modelling in-suite laundry require updating?

11) Miscellaneous recommendations

Provide technical and policy recommendations on the following items. Some questions are provided as a starting point for consideration; the proponent is encouraged to provide additional perspectives as they see fit.

- a) Clarify the application of the corridor pressurization adjustment for buildings using energy/heat recovery ventilation systems for corridor supply and return air
- b) The reduction of maximum corridor pressurization adjustment value for TEDI and TEUI to 5
- c) The removal of the corridor pressurization adjustment for GHGI
- d) What space uses/types should be included within the building's Modelled Floor Area and Gross Floor Area (e.g. below grade storage or bike storage), and justifications based on anticipate impact on TEDI, TEUI, GHGI, CEDI metrics, etc.
- e) Recommend changes to the current sub-metering adjustment for hot water for space heating (see 2.7 of the EMGs), if any. Consider whether the adjustment should be removed for simplicity and/or practicality, or if the adjustment should be expanded to include TEDI and DHW heating.
- f) Recommend whether any further clarifications are needed on the role of the energy modelling professional making reference to the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services⁹

12) GHG reduction target methodology for Groups A, B, and F major occupancies

Draft guidance language on the modelling steps for Groups A, B and F major occupancies with GHG reduction targets in VBBL to determine the GHG reduction target based on an all fossil-fuel baseline modelled as per ASHRAE or NECB requirements. If different modelling steps are required for ASHRAE or NECB projects or for different modelling software, provide guidance for different cases.

13) Review CSA Z5020 Building Energy Modelling Standard

Provide a high-level review of the soon-to-be published *CSA Z5020 Building Energy Modelling Standard* to identify any significant differences to technical modelling procedures or assumptions compared to the EMGs; provide recommendations on changes to EMGs if necessary.

14) Energy Modelling & Report

- a) Apply at least two archetype buildings (at least one 6-storey residential, one 7+ storey residential, etc.) that include typical buildings systems meeting current VBBL requirements, modelled under the methodologies and assumptions outlined in v2.0 of the EMGs and compare the modelled results with the major recommendations from the above list. Provide comparison of how TEDI, TEUI, CEDI, GHGI and overheating hours are affected by the recommended changes. In responding to this RFP, the proponent should specify the methodology for this step.

⁹<https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW7JPMODAJKVYBCLHGRA24FJJPH3/Whole%20Building%20Energy%20Modelling%20Services>

- b) Provide a brief report on how various components of building energy usage may be affected by the changes listed above, along with the proponent's list of recommended changes. The report should also provide brief commentary on any significant changes to energy modelling or design workflow related to the recommended changes.

15) Engagement with stakeholders

Organize and facilitate a minimum of 2 (two) virtual workshops to share proposed changes to the following groups and gather feedback in June 2023. Create an online survey to collect written feedback to a draft version of the EMG changes. The survey should be made live in time for the workshops and remain open for 4 weeks.

- a) Workshop #1 with stakeholders to include relevant code compliance professionals from BC's Climate Action Secretariat, Building & Safety Standards Branch, BC Housing, BC Hydro, local municipalities etc., with approximate 10-20 individuals
- b) Workshop #2 with local energy modelling professionals (approximately 25-50 individuals)

Deliverables

The project will result in the following deliverables to the City:

- 1) Meetings with City staff as appropriate, including at a minimum:
 - a. Kick-off meeting to review scope and clarify assumptions;
 - b. Regular progress updates, bi-weekly as needed;
 - c. Presentation and review of preliminary findings with core City staff;
 - d. Organize and facilitate two workshops to share proposed changes to industry stakeholders, and to gather input on practical, technical or software issues and opportunities
 - e. Online survey to gather feedback from draft EMG changes
- 2) A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved;
- 3) A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI; and
- 4) A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.

SCHEDULE B - FEES AND EXPENSES

Table 1 – Commercial Table – Project Fees

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:	s.21(1)	s.21(1)
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			\$68,600 \$73,402 with PST

Table 2 – Commercial Table – Schedule of Hourly Rates

Team Members	Activity/Role	Regular Rate
Susan MacDougall	Project lead, policy expertise	s.21(1)
Riley Beise	Energy modelling & EMG expertise	
Danny Taylor	Energy modelling	
Kristian Storgard	Energy modelling	
Jennifer Blagborne	Project management (coordination, workshop & survey)	

SCHEDULE C- CONTRACTOR'S PROPOSAL

Incorporated by reference as received by the City and dated February 6, 2023

1. RECOMMENDATION

Recommendation to enter into a contract in relation to RFP PS20230002 - Energy Modelling Guidelines Update 2023 with Focal Engineering Inc. for energy modelling guidelines update services. The recommended term of the contract is six months. The contract value is \$73,402.00, plus applicable taxes, for the initial term of the contract.

2. BACKGROUND

The intent of the RFP is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025.

3. FINANCIAL SECTION

PS20230002 Contract Values	
Project Budget	\$75,000.00
Initial Price for services	\$73,402.00, plus applicable taxes.
Estimated budget savings over the initial contract term.	\$1,598.00
Estimated procurement savings over the initial contract term.	N/A

4. PROCUREMENT SUMMARY

Date of Issuance of RFP:	January 17, 2023	
Notices Sent:	Supply Chain Management (SCM) sent notices to 4 Proponents.	
Closing Date:	February 6, 2023	
Responses Received:	Vendor Name:	Price:
	Focal Engineering Inc.	\$73,402.00
	Evoke Buildings Engineering Inc.	\$73,000.00
Departments:	Supply Chain Management (SCM); and Planning, Urban Design & Sustainability	
Compliance Checks:	Insurance & WCB	

5. EVALUATION SUMMARY

This recommendation is based on an evaluation process that reviewed and evaluated technical, financial and sustainability aspects of the Proponents proposals. The technical aspects were reviewed and evaluated by Planning, Urban Design & Sustainability. The financial and sustainability aspects were reviewed and evaluated by Supply Chain Management and Planning, Urban Design & Sustainability. The proposals submitted by the Proponents were all in compliance with the City's submission requirements.

The table below summarized the evaluation team's scores for each evaluation criteria by vendor.

Evaluation Criteria	Weighting %	Focal Engineering Inc. Score	Evoke Buildings Engineering Inc. Score
Technical Requirements	80%	78	65
Sustainability Requirements	5%	5	5
Financial (budget was published in RFP)	15%	14	15
TOTAL	100%	97	85

Focal Engineering Inc. best demonstrated the ability to meet requirements and is the recommended vendor.

6. SUSTAINABLE & ETHICAL PROCUREMENT

As part of the RFP process Focal Engineering Inc. has demonstrated compliance with the City requirements under the City's Code of Conduct.

7. RISKS

NOT APPLICABLE

8. CHANGE ORDERS

The cumulative value of all Change Orders (CO's) to this contract must not exceed \$10,000.00 without further approvals. Any changes above the contingency must follow the City of Vancouver standard change order process.

A contingency of 15% of the awarded value was discussed and confirmed with Charling Li, Project Manager.

9. CONTRACT MANAGEMENT

Contract	Person/Team Responsible	Frequency
Administration (e.g. start & end dates, compliance)	PUDS	Ongoing until services are completed
Transactions (e.g. OA, POs, GR, invoicing)	PUDS & SCM	Ongoing until services are completed

10. LEGAL

The solicitation document used for the RFP including the form of agreement included therein, was based on a template prepared by Legal Services, as required by the City's Procurement Policy ADMIN-008.

From: "Li, Charling" <charling.li@vancouver.ca>
To: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
CC: "Enright, Patrick" <Patrick.Enright@vancouver.ca>
Date: 2/6/2023 1:18:23 PM
Subject: RE: RFP PS20230002 Draft Evaluation
Attachments: PS20230002 - Evaluation Matrix (individual)_draft.XLSX

Hi Dino,

The scoring panel will be myself and Patrick Enright. I'm fine with the evaluation matrix weightings you suggested.
Thank you!

Charling

From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Sent: Monday, February 6, 2023 11:46 AM
To: Li, Charling <charling.li@vancouver.ca>
Subject: RE: RFP PS20230002 Draft Evaluation

Hi Charling,

In preparation of the RFP closing today please find the attached draft evaluation matrix to be used while when scoring responses. I've added 15% to the technical scoring given we provided the budget.

Can you kindly confirm you're good with this and who will be on the review/scoring panel.

The RFP closes today so will distribute the responses tomorrow morning to the team and allow for 1 week to complete the review as I'm expecting two or three responses. If you think a week is not enough or too much time please let me know what you think is appropriate.

Thanks, Dino

From: Goundouvas, Dino
Sent: Thursday, February 2, 2023 11:22 AM
To: Li, Charling <charling.li@vancouver.ca>
Cc: Enright, Patrick <patrick.enright@vancouver.ca>
Subject: RE: RFP PS20230002 Questions

Hi Charling,

Thank you for this. Will distribute Q&A shortly.

Regards, Dino

From: Li, Charling <charling.li@vancouver.ca>
Sent: Thursday, February 2, 2023 11:12 AM
To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Cc: Enright, Patrick <Patrick.Enright@vancouver.ca>
Subject: RE: RFP PS20230002 Questions

Hi Dino, we're fine to post the budget of \$65k.

Re: question 3 on workshop length: We expect workshop 1 and 2 to be between 1.5 to 2 hours each.

Thank you!

Charling

From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Sent: Wednesday, February 1, 2023 8:59 AM
To: Li, Charling <charling.li@vancouver.ca>
Subject: FW: RFP PS20230002 Questions

Hi Charling,

Received several questions from Focal Engineering (see below). I can handle the first two but, if you could provide some feedback to questions 3 and 4.

Note: We can publish the budget but note sure how fixed it is?

Thanks, Dino

From: Susan MacDougall <susan@focaleng.com>
Sent: Wednesday, February 1, 2023 8:39 AM
To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Cc: Jennifer Blagborne <jennifer@focaleng.com>
Subject: [EXT] RFP PS20230002 Questions

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Hello Dino,

Thank you for receiving our questions.

1. For Jurisdiction of Legal Organisation, are you looking for the AHJ of our primary office?
2. For Date of Legal Organisation, are you looking for our BC incorporation date?
3. How long are workshops 1 and 2 intended to be?
4. Would the City consider providing a preferred budget for this RFP?

With respect to the last question, we realize that price can play an important role in evaluating submissions, however, working towards a budget when responding can help shift the focus towards developing a robust proposed approach over trimming hours to provide a competitive price.

Best regards,
Susan

Susan MacDougall P.Eng., FEC, LEED AP BD+C, CPHC
Principal | she/her
t 604.318.3596 x1 | m 604.842.7893
susan@focaleng.com



RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

Evaluation Guide: 0 = Unsatisfactory 1 = Poor 2 = Average 3 = Good 4 = Very Good 5 = Excellent

- 0 = Unsatisfactory** The Submission is Unsatisfactory with the Proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor** The Proponent barely satisfies the criteria. Significant risk may exist if proceeding with the supplier and would require major effort to develop a satisfactory performance level.
- 2 = Average** The Proponent is able to satisfy the criteria but further evidence and information is required to test and substantiate performance level claims.
- 3 = Good** The Proponent has demonstrated that the criteria have been clearly satisfied and that they understand the requirements substantiated by detailed explanation. Actual experience may be limited in some areas.
- 4 = Very Good** The Proponent has demonstrated that the criteria have been clearly satisfied and substantiated by experience in providing a significant level of beneficial insight and knowledge in the proposed solution.
- 5 = Excellent** The Proponent has clearly demonstrated that they satisfy or exceed the criteria by proposing a superior solution, substantiated with experience, knowledge and references.

Evaluation - Technical Proposal (Dept. to review)													
Evaluation Criteria	Weight	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%			0.0%			0.0%			0.0%			0.0%
Executive Summary Provide a brief executive summary of your Proposal.	5%			0.0%			0.0%			0.0%			0.0%
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%			0.0%			0.0%			0.0%			0.0%
Sustainability (Environmental and/or Social) - See Response to Supplier Diversity section/checklist to be completed by SCM.	5%			0.0%			0.0%			0.0%			0.0%
SUBTOTAL OF TECHNICAL SCORES				0.0%			0.0%			0.0%			0.0%
General Remarks (MANDATORY)													

From: "Eileen Holt" <eholt@EvokeBuildings.com>
To: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
CC: "Alex Blue" <ablue@EvokeBuildings.com>
Date: 2/6/2023 1:47:56 PM
Subject: [EXT] RFP No. PS20230002 - Consultant Services - 2023 Energy Modelling Guidelines Update - Evoke Buildings Proposal
Attachments: CoV RFP No. PS20230002 Consultant Services - 2023 Energy Modelling Guidelines Update - Evoke Proposal.pdf

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Hello Dino,
Attached is our proposal to provide consulting services for the 2023 Update to the Energy Modelling Guidelines.
We appreciate the opportunity.

Regards,



Eileen Holt
eholt@EvokeBuildings.com
Office and Marketing Manager
4415 Juneau Street,
Burnaby BC V5C 4C4
www.evokebuildings.com [evokebuildings.com]

Vacation Alert: Away Feb. 9, returning March 6

REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

APPENDIX 1
PROPOSAL FORM

RFP No. PS20230002, CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE (the
"RFP")

Proponent's Name: Evoke Buildings Engineering Inc.
"Proponent"

Address: 250-997 Seymour Street, Vancouver, BC V6B 3M1

Jurisdiction of Legal Organization: British Columbia

Date of Legal Organization: Extra provincially in BC 2020/12/02

Key Contact Person: Alex Blue

Telephone: 604-260-1124

E-mail: ablue@evokebuildings.com

The Proponent, having carefully examined and read the RFP, including all amendments thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 2 to the RFP.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

s.15(1), s.22(1)

Signature of Authorized Signatory for the Proponent

February 6, 2023

Date

Alex Blue, Principal, Building Energy Specialist

Name and Title

s.15(1), s.22(1)

Signature of Authorized Signatory for the Proponent

February 6, 2023

Date

Sophie Mercier, Principal & Director

Name and Title

Executive Summary

Provide a brief executive summary of your Proposal.

Evoke is proposing a multi-company collaboration with RDH and AME, bringing a number of specialty focusses together under a single umbrella. The project will be led and completed by practicing energy modellers and designers with practical knowledge and current project experience, combined with policy and guideline development expertise.

The project will be led by Evoke, providing a single clear point of contact for City staff. We will work with RDH and AME to draw on specific technical expertise. Each firm's input will be led by practicing energy modellers with different areas of focus, and with both envelope and mechanical design engineers available to draw on for expertise. Elements of scope will be divided up, with Evoke acting as the technical clearinghouse to provide oversight and coordination between these elements. We also believe having multiple firms on the team will bring significant value to the City, allowing us to readily compare methodologies, perspectives, and software requirements in early discussions. In addition, the multi-company team approach will facilitate meeting the project timeline, as initial development of recommendations can proceed in parallel on different topics, bringing recommendations back together for validation, discussion, and consultation.

Initial recommendation development will draw on our existing expertise and previous modelling as well as existing sources, which will then be validated by modelling using actual recent project models that were designed and modeled based on the Energy Modelling Guidelines v2.0. These models will be updated to the proposed v3.0, in mechanical cooling and passive cooling scenarios.

Consultation is understood to be an important element of this RFP. We will plan and lead two virtual workshops as well as conducting an online survey.

Our project team members have significant experience in working with other modellers, reviewing models and outcomes, and working on development of policies, codes, guides, and standards. We have been involved in developing guides, research, and policies for the City of Vancouver, the BC Energy Step Code, UBC, ZEBx, BC Housing, the City of Mississauga, and more. We include members of technical and industry advisory groups including the City of Vancouver's UDP, CaGBC, the CSA Z5020 committee, Step Code technical advisory and more. We are involved in the industry beyond our individual firms, and are well positioned to collaboratively understand and address likely concerns both from policy makers and from users of the guidelines.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Our approach to developing initial recommendations will lean on prior work to understand and quantify impacts. Following initial development of recommendations, and discussion of those recommendations with the City, we will apply the proposed changes to existing project energy models to quantify overall impacts under a limited number of carefully selected scenarios.

We see the project being carried out in four main phases (with some iteration and overlap):

Initial Recommendations

Our early focus will be on developing well-supported technical recommendations, based on the following sources.

1) Previous modelling or research by our team members

- a. Project modelling or project experience – e.g. Evoke has available existing modelling comparing CWEC2016 and 2020 weather files from previous project work. We have experience with applications of the modeled floor area over various space types, application of the corridor pressurization adjustment, impacts of GHG reduction modelling compared with ASHRAE and NECB, and have ready access to a variety of energy models across a number of building types, including low- and high-rise MURBs, mixed-use buildings, offices, and others (e.g. schools, institutional buildings) both in the City of Vancouver and across the Lower Mainland (targeting Step Code and modeled based on the EMG v2.0).

As indicated in the RFP, recommendations for the refrigerant methodology will be based on existing available resources and reports, with consideration to other relevant standards or regulations. AME will also review and make recommendation on whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume or cooling capacity. AME has access to refrigerant information from a variety of projects and system types, and can refer to this information if required.

- b. Previous design guides – e.g. RDH developed UBC's Design for Climate Resilient Buildings document, as well as the Climate Resilience Framework and Standards for Public Sector Buildings, which they will draw on to develop strategies around overheating analysis, CEDI, and resilience. AME developed a ZEBx Playbook, "Ventilation Strategies for High-Performance Multi-Unit Residential Building", which will contribute background to discussions of both ventilation rate standard and corridor pressurization.
- c. A member of our team was on the CSA Z5020 committee, allowing us to draw readily on his existing knowledge of the standard.

2) Previous modelling or research by others

- a. Research by others will inform some recommendations, for example the DHW recommendations have been explored in depth previously. In these cases, we will focus on impact on overall TEUI, TEDI, and GHGI based on existing project examples and basic calculations. Our approach for appliances, laundry, lighting, and elevators will similarly draw on existing information, supplemented by our project experience of how these items impact model and design outcomes.
- b. To consider form factor recommendations, we intend to leverage Building Pathfinder to quantify impacts of VFAR; this will allow for a replicable and transparent factor development and allow fast comparison of a number of possible options.

Validation via Energy Modelling

Once we have developed preliminary recommendations and discussed our initial proposals and reasoning with the City, we will test the recommendations against the v3.0 guidelines using whole building energy modelling. Modelling will be done by Evoke using our existing project models. We anticipate using a wood-framed low-rise MURB (6 storeys), and a high-rise MURB, both of which are either in detailed design or past the building permit phase, and are located in the Lower Mainland and modeled to v2.0 of the EMG.

We anticipate developing several iterations of these models, in particular to analyze with and without mechanical cooling scenarios and compliance paths. Our main focus will be to analyze the overall combined impact of the recommended changes. We anticipate that the impacts of many of the proposed changes will be readily apparent and will not require separate analysis; e.g. the DHW changes will only impact DHW end use, which will be shown as an outcome of the modelling. Where impacts are both substantial and not immediately apparent, e.g. ventilation standards, we have allowed for a small number of dedicated iterations to isolate and illustrate individual impacts.

It is possible that certain of these isolated iterations may need to be done during the initial recommendation development; this is easy to do using the same models and methods and can be carried forward into this validation analysis.

We do not anticipate that there will be sufficiently broad changes to the non-residential modelling guidelines to require a re-modelling, however we do have access to existing office and retail building models and can readily run one or two basic items (e.g. a change to ventilation rates).

We expect that the biggest goal of the energy models will be to confirm, consolidate, and communicate impacts, which will be used during the consultations described below.

Consultation

We will lead two 1.5-2 hour virtual workshops, and will conduct an online survey.

Workshop 1 will be focussed on relevant code compliance professionals, while workshop 2 will focus on local energy modelling professionals.

We will work with the City to develop the invitation lists. The first workshop will be invitation only and will include stakeholders throughout the province. We anticipate that this will be a

smaller group (10-20 as noted in the RFP) and will allow for more open discussion time. We note that the upcoming version of the BC Energy Step Code will specifically reference v2.0 of the EMG, but that future versions may be adopted at some point and will certainly have an impact beyond Vancouver. We have not allowed for additional exploration of impacts outside of Vancouver but will provide the information and background we can based on our experience.

The second workshop will be open invitation and will be distributed to our and the City's networks. The RFP anticipates approximately 25-50 individuals. In this larger workshop, we anticipate a more structured and time-bounded format for feedback to allow for the larger group format.

A survey will be developed in time to be distributed during the workshops, with additional distribution within our and the City's networks. We anticipate that the survey will be primarily multiple choice, with limited open feedback options, to allow us to collect, analyze, and incorporate feedback within the project timelines.

Finalizing the Report and Guidelines

Once feedback from the draft report, workshops, and survey are collected, we will update and finalize our report and the EMG v3.0 with tracked changes.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

EVOKE BUILDINGS ENGINEERING INC.

Alex Blue, P.Eng., BEMP, LEED AP BD+C – Principal, Building Energy Specialist

Project Lead

s.22(3)(d)

Grace Suri, LEED AP BD+C – Building Energy Specialist

Building energy modelling, technical input

s.22(3)(d)

s.22(3)(d)



RDH BUILDING SCIENCE

Brittany Coughlin, M.A.Sc., P.Eng., BEMP, CPHC, LEED AP – Principal, Energy + Sustainability Specialist

RDH project lead, overheating, CEDI, and resilience focus

s.22(3)(d)



Eric Catania, M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C – Associate, Senior Energy and Sustainability Analyst

Technical input, expertise with numerous software types

s.22(3)(d)



s.22(3)(d)

Neil Norris, M.A.Sc., P.Eng., CPHD – Associate, Building Science Specialist
Technical input, CSA Z5020, survey development and analysis

s.22(3)(d)

The AME Consulting Group Ltd.

Marc Trudeau, P.Eng., Architect AIBC, BEMP, CPHD, LEED AP BD+C
AME project lead, refrigerant GHGI-R focus

s.22(3)(d)

Patrick Stewart, P.Eng. CPHD, LEED Green Assoc.
Mechanical design engineer, technical input

s.22(3)(d)

**REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE**

s.22(3)(d)

References	
Client Name # 1	Province of BC, Building and Safety Standards Branch, Ministry of Housing
Address (City and Country)	PO Box 9844 Stn Prov Govt Victoria, BC, Canada
Contact Name	Scott Williams
Title of Contact	Senior Codes Engineer
Telephone No.	236-478-2043
E-mail Address	Scott.B.Williams@gov.bc.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	
Client Name # 2	Jameson Development Corp
Address (City and Country)	670 – 1655 West Broadway Vancouver, BC
Contact Name	Tom Pappajohn
Title of Contact	VP
Telephone No.	Office: 604-732-7122
E-mail Address	tom@jamesoncorp.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

**REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE**

Client Name # 3	University of British Columbia Properties Trust
Address (City and Country)	Suite 200 – 3313 Shrum Lane Vancouver, British Columbia Canada V6S 0C8
Contact Name	Shawn Rodgers
Title of Contact	Development Manager
Telephone No.	C: 778-987-8965
E-mail Address	SRodgers@ubcproperties.com
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	
**Additional RDH Reference **	
Client Name # 4 - RDH Reference	University of British Columbia, Sustainability and Engineering, Campus and Community Planning
Address (City and Country)	Centre for Interactive Research on Sustainability, 2210 West Mall, Vancouver, BC V6T 1Z4
Contact Name	Ralph Wells
Title of Contact	Community Climate and Energy Manager
Telephone No.	(604) 827-1838
E-mail Address	ralph.wells@ubc.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

Subcontractors

List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).

RDH BUILDING SCIENCE

Scope subcontracted: Development of recommendations and reporting for overheating, resilience, CEDI, future climate weather files, and assist with review of CSA Z5020. Assist with workshops (led by Evoke) and lead survey development and analysis (with input from Evoke).

The AME Consulting Group Ltd.

Scope subcontracted: Development of recommendations and reporting for refrigerant impact, with input and coordination from Evoke. Provide brief input from a mechanical design perspective on compliance for actively cooled buildings. Be present for workshops to answer questions and be available to respond to input from City staff and consultation.

Declaration of Supplier Code of Conduct

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") <<https://policy.vancouver.ca/AF01401P1.pdf>>, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.

As an authorized signatory of Evoke Buildings Engineering Inc. (*vendor name*), I declare that I have reviewed the SCC and to the best of my knowledge, Evoke Buildings Engineering Inc. (*vendor name*) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of Evoke Buildings Engineering Inc. (*vendor name*). s.15(1), s.22(1)

Signature: _____

Name and Title: Alex Blue, Principal, Building Energy Specialist

Exceptions to Declaration: None.

REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

Conflicts, Collusion, Lobbying
See Article 9 of Appendix 2 for instructions.
Invoke Buildings Engineering Inc. confirms and warrants there is no Conflict of Interest / Collusion / Lobbying as per Article 9 of Appendix 2 of the RFP.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Est. Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:	75	\$ 12,000
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved	150	\$ 24,000
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI	100	\$ 16,000
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.	112.5	\$ 18,000
Totals (fees should include PST but exclude GST)		437.5	\$ 70,000

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
Alex Blue	Principal, Project Lead	s.21(1)
Grace Suri	Building Energy Consultant	
Brittany Coughlin	Principal, Energy and Sustainability Specialist	
Eric Catania	Associate, Energy and Sustainability Specialist	
Neil Norris	Associate, Building Science Specialist	
Patrick Stewart	Principal, Mechanical Advisory Services	
Marc Trudeau	Principal, Mechanical Advisory Services	
Energy Engineer	Additional support	

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

<p>Majority owned/controlled/ by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Women <input type="checkbox"/> Indigenous Peoples <input type="checkbox"/> Non-Profit/Charity (Social Enterprise) <input type="checkbox"/> Coop <input type="checkbox"/> Community Contribution Corporation (3C/CCC) <input type="checkbox"/> Ethno-cultural Persons <input type="checkbox"/> People with Disabilities <input type="checkbox"/> LGBTQ+ <input type="checkbox"/> Other: please indicate 	<p>Workforce Diversity:</p> <p>60% Women</p> <p>% Indigenous Peoples</p> <p>% Ethno-cultural People</p> <p>% People with Disabilities</p> <p>% LGBTQ+</p> <p>% Other: please indicate</p>	<p>Social / Environmental Certifications</p> <ul style="list-style-type: none"> <input type="checkbox"/> BCorp <input type="checkbox"/> BuySocial <input type="checkbox"/> Supplier Diversity Certification <input type="checkbox"/> Fairtrade <input type="checkbox"/> Green Business Certification (ie. LEED, ClimateSmart) <input type="checkbox"/> Other: please indicate
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s.22(1)

Alex Blue, P.Eng., BEMP, LEED AP BD+C
Principal, Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

Alex Blue, P.Eng. BEMP, LEED AP BD+C
Principal, Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Alex Blue

(Print Name)

consent to the indirect collection from Evoke Buildings Engineering Inc.

(Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)

Signature

January 3, 2023

Date

s.22(1)

Grace Suri, LEED AP BD+C
Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

Grace Suri, LEED AP BD+C
Building Energy Specialist

s.22(3)(d)

s.22(3)(d)

s.22(3)(d)

PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Grace Suri

(Print Name)

consent to the indirect collection from Evoke Buildings Engineering Inc.

(Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)



Signature

February 3, 2023

Date

s.22(1)

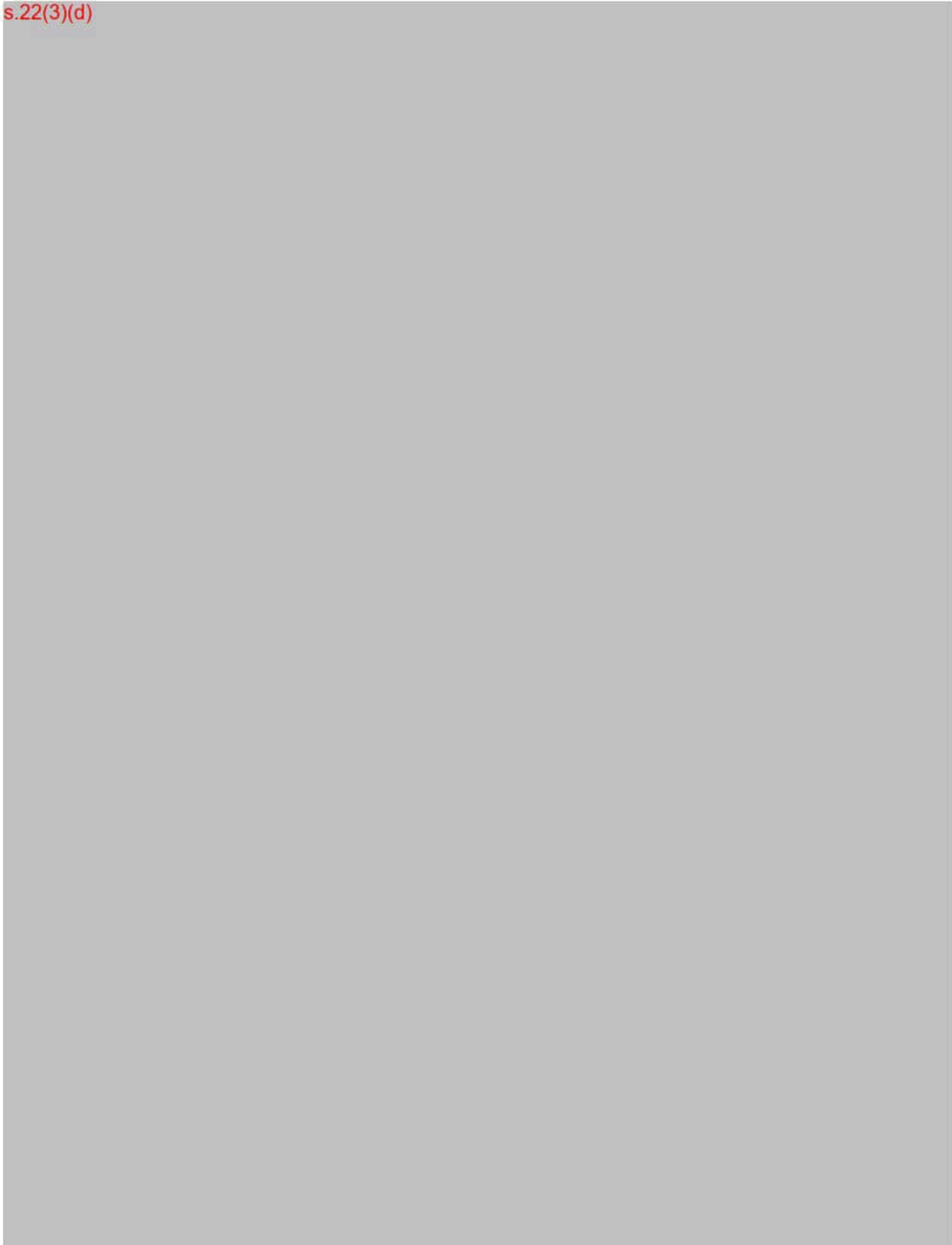
Brittany Coughlin | M.A.Sc., P.Eng., BEMP, CPHC, LEED® AP
Principal, Energy + Sustainability Specialist

s.22(3)(d)

s.22(3)(d)



s.22(3)(d)



s.22(3)(d)

Selected Publications

- Coughlin, Brittany, Christy Love, and Robert Lepage. "Passive House in Canada: Case Studies on a Near EnerPHit Retrofit and Post-Occupancy Research." Paper presented at 21st International Passive House Conference, Vienna, Austria, April 2017.
- Coughlin, Brittany. "Measured Performance: The Importance of Assessing Building Energy Consumption." *Construction Business Magazine*, 2015.
- Hanam, Brittany and Graham Finch. "Evaluating the Energy Savings of High-Performance Building Enclosure Retrofits." Paper presented at 14th Canadian Conference on Building Science and Technology, Toronto, ON, 2014.
- Hanam, Brittany, Al Jaugelis, and Graham Finch. "Energy Performance of Windows: Navigating North American and European Window Standards." Paper presented at 14th Canadian Conference on Building Science and Technology, Toronto, ON, 2014.
- Hanam, Brittany, Graham Finch, and Dave Ricketts. "Deep Energy Retrofits of High-Rise Multi-Unit Residential Buildings." Paper presented at ACEEE Summer Study on Energy Efficiency in Buildings, Pacific Grove, CA, 2014.
- Finch, Graham and Brittany Hanam. "Net Zero Building Enclosure Retrofits for Houses: An Analysis of Retrofit Strategies." Paper presented at ASHRAE Buildings XII, Clearwater Beach, FL, 2013.
- Hanam, Brittany, Graham Finch, and Susan Hayes. "Energy Ratings for Windows: Balancing Energy Consumption and Thermal Comfort." Paper presented at ASHRAE Buildings XII, Clearwater Beach, FL, 2013.
- Hanam, Brittany, Graham Finch, and Dave Ricketts. "Thermal Importance of Windows: The Focal Point for Building Enclosure Energy Savings." *Construction Canada*, 24-30, 2012.
- Hanam, Brittany, Graham Finch, and Curt Hepting. "Meter Calibrated Energy Simulation of High-Rise Residential Buildings: Lessons Learned." Paper presented at 13th Canadian Conference on Building Science and Technology, Winnipeg, MB, 2011.

Selected Presentations

- "Passive House in Canada: Case Studies on a Near EnerPHit Retrofit and Post-Occupancy Research." Presented at 21st International Passive House Conference, Vienna, Austria, April 2017.
- "Deep Energy Retrofits of High-Rise Multi-Unit Residential Buildings." Presented at ACEEE Summer Study on Energy Efficiency in Buildings, Pacific Grove, CA, August 2014.
- "Thermal Performance of Exterior Insulated Wall Assemblies: Why this is the new norm." Presented at RCI Western Canada Chapter Seminar: Walls and Roofs, Vancouver, BC, June 2014.
- "Deep Energy Retrofits of High-Rise Multi-Unit Residential Buildings." Presented at ASHRAE High Performance Buildings Conference, San Francisco, CA, April 2014.
- "Window Standards Compared: NFRC vs. ISO vs. PHI." Presented at Passive House North West (PHNW) 5 Conference, Portland, OR, March 2014.
- "Energy Ratings for Windows: Balancing Energy Consumption and Thermal Comfort." Presented at ASHRAE Buildings XII Conference, Clearwater Beach, FL, December 2013.
- "Window Standards Compared: NFRC vs. ISO vs. PHI." Presented at Passive House North 2013, Vancouver, BC, September 2013.
- "Energy Modeling of Existing Mid- and High-Rise Multi-Unit Residential Buildings To Predict Energy Savings of Building Enclosure Retrofits." Presented at ASHRAE Energy Modeling Conference: Tools for Designing High Performance Buildings, Atlanta, GA, October 2012.
- "Choosing Windows: Balancing U-Value, Solar Heat Gain, Comfort and Energy." Presented at the 2012 BC Building Enclosure Council Annual Conference and AGM, Vancouver, BC, September 2012.
- "Near Net Zero Building Enclosure Retrofits for Houses." Presented at the 2012 AIBC Annual Conference, Vancouver, BC, May 2012.

PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Brittany Coughlin
_____(Print Name)

consent to the indirect collection from RDH Building Science Inc _____
_____(Print Name of Proponent) of my
personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)


February 3, 2023

Signature

Date

s.22(1)

Eric Catania

M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C,
PHI Accredited Passive House Certifier

**Associate, Senior Energy and Sustainability
Analyst**

s.22(3)(d)

s.22(3)(d)

Eric Catania

M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C,
PHI Accredited Building Certifier

**Associate, Senior Energy and Sustainability
Analyst**

s.22(3)(d)

s.22(3)(d)

Publications + Presentations

- Chidiac, SE, et al., "Computation tools for selecting energy conservation measures for retrofitting existing office buildings." *Canadian Journal of Civil Engineering* 40 (2013): 445-459.
- Chidiac, SE, Catania, EJC, Morofsky, E., Foo, S. "Effectiveness of single and multiple energy retrofit measures on the energy consumption of office buildings." *Energy* 36, no. 8 (2011): 5037-5052.
- Chidiac, SE, Catania EJC, Morofsky, E., Foo, S. "A screening methodology for implementing cost effective energy retrofit measures in Canadian office buildings." *Energy and Buildings* 43, no. 2-3 (2011):614-620.
- Catania, EJC, Chidiac, SE, Morofsky, E, Foo, S. "Comparative analysis of energy simulation programs, EnergyPlus and FEDS, using energy data from nine office buildings." Presented at



Eric Catania

M.Eng., P.Eng., BEMP, CPHD, LEED AP BD+C,
PHI Accredited Building Certifier

**Associate, Senior Energy and Sustainability
Analyst**

the 2nd Canadian Conference on Effective
Design of Structures, Hamilton, ON, 2008.

PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Eric Catania

(Print Name)

consent to the indirect collection from RDH Building Science Inc _____

(Print Name of Proponent) of my
personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)



Signature

February 3, 2023

Date

s.22(1)



Neil Norris | M.A.Sc., P.Eng., CPHD
Associate, Building Science Specialist

s.22(3)(d)



s.22(3)(d)



s.22(3)(d)



PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, Neil Norris

(Print Name)

consent to the indirect collection from RDH Building Science Inc _____

(Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)



February 3, 2023

Signature

Date

s.22(1)

Patrick Stewart

P.Eng., CPHD, LEED Green Assoc.

PRINCIPAL

Building Legacy at AME Group since 2011.

s.22(3)(d)

s.22(3)(d)



PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, PATRICK STEWART
_____ (Print Name)

consent to the indirect collection from ALEX BLUE
_____ (Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)



Signature

FEB 6 2023
Date

s.22(1)



Marc Trudeau

P.Eng., Architect AIBC, BEMP, CPHD, LEED AP
BD+C.

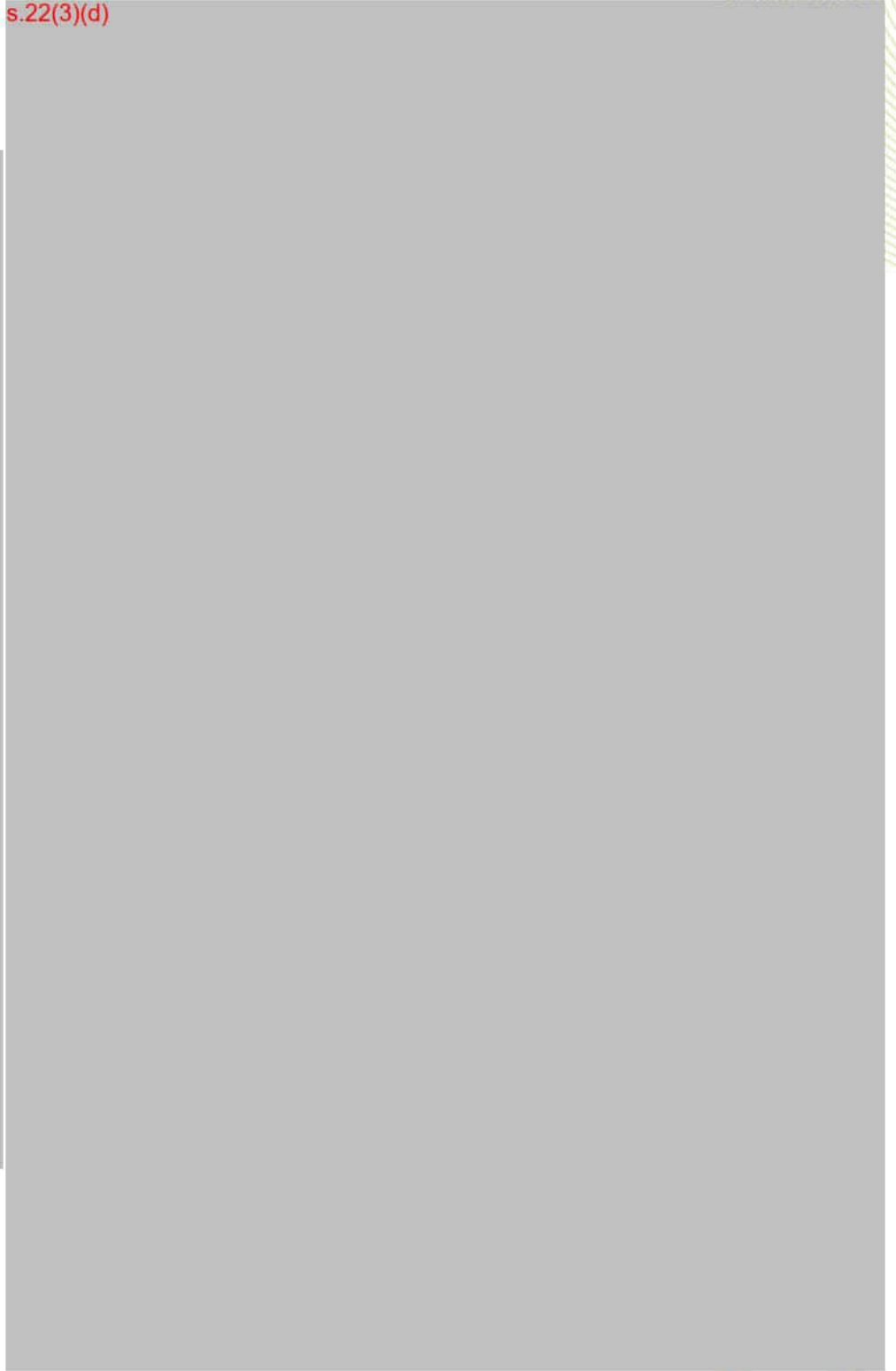
PRINCIPAL

Building Legacy at AME Group since 2019.

s.22(3)(d)



s.22(3)(d)



PERSONAL INFORMATION CONSENT FORM(S)

Complete one copy of this Personal Information Consent Form(s), in the form set out below, for each key personnel for whom a CV or other information regarding employment history and qualifications has been included in the Proposal.

PERSONAL INFORMATION CONSENT FORM

Reference #PS20230002

Title: Consultant Services - 2023 Energy Modelling Guidelines Update

With the provision of my signature at the foot of this statement I, _____

Marc Trudeau (Print Name)

consent to the indirect collection from _____

Evoke Buildings Engineering Inc (Print Name of Proponent) of my

personal information in the form of a work history, resume or summary of qualifications.

In consenting to this indirect collection, I understand that my personal information, so collected, will be stored on servers located in the United States and will be used by the City for the sole purpose of evaluating the submitted response to the above-noted procurement process. I understand further that my personal information, once collected by the City, will be handled by the City in accordance with the provisions of the (BC) *Freedom of Information and Protection of Privacy Act*.

s.15(1), s.22(1)

February 2, 2023

Signature

Date

From: "Enright, Patrick" <Patrick.Enright@vancouver.ca>
To: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
Date: 2/10/2023 6:02:48 PM
Subject: RE: PS20230002 - Evaluation of Proposals
Attachments: PS20230002 - Evaluators Declaration and Evaluation Guide - PE signed.docx
PS20230002 - Evaluation Matrix (Patrick Enright).XLSX

Hi Dino,

Please find attached my signed evaluators declaration and completed scoring matrix.

Happy to meet with you and Charling to review when ready.

Thanks, and have a great weekend!

Patrick Enright, P.Eng | Senior Green Building Engineer
(he/him/his)
Sustainability Group | Planning, Urban Design & Sustainability | City of Vancouver
patrick.enright@vancouver.ca | 604.871.6158

For more information on green buildings, please visit <http://vancouver.ca/zeroemissions>

I am humbly thankful that I live and work on the territories of the xʷməθkʷəy̅əm (Musqueam), Skwx̱'w̱817_ wú7mesh (Squamish), and səfilwətaʔt / səfilwítulh (Tsleil-Waututh) nations.

From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Sent: Tuesday, February 07, 2023 8:56 AM
To: Li, Charling <charling.li@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>
Subject: PS20230002 - Evaluation of Proposals

Hi Charling and Patrick,

As designated evaluators relating to RFP PS20230002 - CONSULTANT SERVICES –2023 ENERGY MODELLING GUIDELINES UPDATE please find the attached submissions for your individual review and scoring of the technical requirements. Pricing and hourly rates have been removed to not bias the technical scoring process.

The RFP that was issued/posted is also attached as a reference document.

Two submissions were received by the closing time from:

1. Focal Engineering Inc.
2. Evoke Buildings Engineering Inc.

Also attached is the evaluation matrix in order for each team member to individually score the submissions. Please complete the matrix including comments and return me via email by 12pm, Monday, February 13. If for whatever reason you require more time to complete the review and

scoring please advised me as soon as possible.

It is also required that all evaluators must review, complete and signed the attached "Evaluators Guidelines & Declaration Form. Please complete this form as soon as possible and return to me via email.

If you have any questions or clarifications please contact me.

Regards,
Dino
604.871.6812



EVALUATOR'S GUIDELINES AND SCORING MANUAL

REQUEST FOR PROPOPAL PS20230002

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

February 7, 2023

Dino Goundouvas
Supply Chain Management

1. Introduction

Thank you for your participation in the evaluation of this request for proposals (RFP).

These guidelines are provided to:

- 1) assist you with your evaluation
- 2) maintain consistency amongst evaluation team members in the determination of a successful proponent
- 3) ensure that there is no conflict of interest in your participation in this evaluation. In accordance with the policies prescribed by the City of Vancouver.

Proponents spend a significant amount of time and resources preparing and supporting the offers they submit to provide products and professional and technical services to the City. The City benefits from this investment since it contributes both quality and choice to the City's strategic plans. In return for this effort, proponents are entitled to a full and fair evaluation.

This document is designed to assist evaluators in their evaluation of proponents' submissions and to help ensure the establishment of a clear record for the rationale used in assigning scores against the stated evaluation criteria. The City must be prepared to provide all proponents with feedback on a criterion-by-criterion basis and be able to support the reasons for the scores assigned by the evaluation committee.

2. Conflict of Interest

Any member of the evaluation committee who feels that they are, or may be, in a conflict of interest must declare this fact to the RFP Facilitator. If a potential conflict is disclosed, the RFP Facilitator will need to decide whether the member will be permitted to remain as an Evaluator. The Standards of Conduct for Public Service Employees Engaged in Government Procurement Processes provide a number of examples of conflict of interest. A conflict could exist if the individual:

- (i) has a friendship or familiar relationship with one of the proponents; or
- (ii) works for a company that is submitting a response; or
- (iii) has a strong bias for, or against, one of the proponents; or
- (iv) has a significant interest in a company submitting a response; or
- (v) has a direct or indirect financial interest in a proponent's business; or
- (vi) has an immediate family member who has input into a proponent's proposal; or
- (vii) has assisted in the preparation of a proposal; or
- (viii) has received a gift from one of the proponents.

All Evaluators are required to sign Non-disclosure and Conflict of Interest declaration forms which state the terms and conditions of conduct for the evaluation process. **Please**

be aware that all documents are subject to disclosure under the Freedom of Information and Protection of Privacy Act of British Columbia.

3. General

During the evaluation process, it is important to treat all proponents fairly and equally, and to evaluate their bids in accordance with the process described in the RFP. Care must be taken throughout the process not to take any actions or make any decisions that could be construed as providing an unfair advantage to any proponent.

Therefore:

- Each evaluator must act independently and be free from bias and conflict of interest, act objectively and consider only the information received via the RFP process. This means that the scoring must be based strictly on the merits of the proposal.
- It is each evaluator's responsibility to ensure all documentation related to the evaluation process is kept secure at all times;
- Evaluators are not to discuss the evaluation, scores or any issues of the RFP with any of the proponents or vendors;
- Evaluators should avoid discussing any aspect of the evaluation or share any information submitted, including submissions or other related documents with anyone INCLUDING other members of the evaluation committee (unless this discussion is being facilitated by the RFP Facilitator); and
- All questions should be directed to the RFP Facilitator.

4. Evaluation Procedure

Prior to reading or scoring the Proposals, the evaluator should read the RFP document, Questions and Answers, and any amendments or addenda. Copies of these documents will be provided by the RFP Facilitator.

- a. Accompanying this evaluation guidelines document is the RFP Evaluation Form for each proposal. The evaluator is required to write his/her name on each RFP Evaluation Form.
- b. Proposals must be evaluated on their individual merits against the evaluation criteria stated in the RFP PS20230002 and awarded scores using the scoring guidelines provided.
- c. Scores must not be awarded by comparing proposals against each other.
- d. Only information enclosed in the proposals may be used during the evaluation process. Information about or knowledge of the proponents that are external to the proposals must not be used in the assessment of proposals.
- e. On the RFP Evaluation Form, the scoring scale (0 to 5) is located at the bottom of each page and explained in more detail in the following Section 5. Each evaluator is to enter, in his/her opinion, the most applicable level as judged in meeting the requirement, and provide a brief explanation substantiating the score. For example, is there anything lacking or outstanding in the Proponent's response. Also, comments should be provided if an item receives a score of 0, 1, 4, or 5.

- f. At the end of the scoring section, a general comments section has been provided where the evaluator has an opportunity to provide further comments with respect to the proposal. ***These comments are important for debriefing unsuccessful proponents.***
- g. Each category has been assigned a weighting value. The combination of the weights and all scores will be calculated to determine the highest rated proponent(s). This may provide the basis for determining a short-list of proponents or a successful proponent, if any, after all factors have been considered.
- h. When evaluating the proposals, the following procedure is recommended:
 - (i) Read the proposal in its entirety before making any notes or assessing any scores. This will provide you with an overview of what is being proposed.
 - (ii) Go to the sections in the proposal you have been asked to evaluate, and read through the entire section(s). Make notes where applicable.
 - (iii) Read the section again, assess and provide a score for each criterion and include brief comments that substantiate your decision. The comments may be referred to in any post assessment evaluators meeting; they are also beneficial for preparing any debriefing reports or meetings.
- i. When all proposals have been evaluated, check to ensure that all items have been addressed and that there are no omissions. Return the RFP Evaluation Form to SCM to compile and summarize the scores.

5. Evaluation Assessment Guidelines

Note: In the absence of any additional instructions provided by SCM to the team, please consider the following as the guideline for assessment.

Following are the assessment guidelines for scoring the proposals:

- 0 = Unsatisfactory:** The proposal is unsatisfactory, with the proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor:** The proponent barely satisfies the criteria. Significant risk may exist if proceeding with the proponent, requiring significant effort to develop a satisfactory performance level.
- 2 = Average:** The proponent is able to satisfy the criteria but further information is required to substantiate the proponent's claims of compliance with the particular requirement.
- 3 = Good:** The proponent has demonstrated that the requirement has been clearly satisfied and a sound understanding of the particular requirement, substantiated by detailed explanation and other supportive evidence. Related experience may be limited in some areas.
- 4 = Very Good:** The proponent has clearly demonstrated that the requirement has been satisfied, substantiated by a strong level of related

experience and in providing a significant level of beneficial insight and knowledge in the proposed solution.

5 = Excellent: The proponent has clearly demonstrated that they exceed the requirements by proposing an exceptional solution, substantiated with a strong level of understanding of the City's requirements plus related experience, resources, knowledge, skills and references.

All criteria will be assessed using the scoring guidelines outlined above.

The score for 'Price' will be determined by SCM using a formula outlined below whereby the lowest price for the complete package requested gets the full points available and the other pricing proposals are rated in relation to the lowest price.

The following formula will be used:

$$S = ((Lp / P) * W) * 100 \text{ where:}$$

S = Weighted percentage score
 Lp = Lowest priced bid
 P = Price
 W = percentage weight

These calculations will be done by SCM and will be shared with the evaluation committee at the evaluation meeting once the management; technical and financial scoring has been completed.

6. Evaluation Responsibilities

Category	Supply Chain Management	Evaluation Team
Terms and conditions, and high level mandatory requirements	X	
RFP administrative compliance	X	
Proponent information, references	With direction from Evaluation Team	X (references)
Business requirements		X
Other: Value-added services		X
Pricing/cost	X	
Sustainability	X	

Evaluator's Non-disclosure and Conflict of Interest Form

Date:	2023-02-10
Employee Name:	Patrick Enright
Project No.:	PS20230002
Project Title:	CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

Please sign below after completing the following:

1. I understand my role in ensuring that I do not discuss or disclose any information while evaluating this proposal. <i>(See item 3 under General on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. I understand my role in ensuring that a conflict of interest does not occur. <i>(See item 2 under Conflict of Interest on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
3. I believe that I might have a conflict of interest.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

If Yes has been chosen for Item 3, please explain reason for potential conflict of interest. I have a relationship with:

Company Name: _____

Name: _____ Relationship: _____

Details: _____

 _____ Employee's signature	2023-02-10 _____ Date	Patrick Enright _____ Print Name
--	-----------------------------	--

RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

Evaluation Guide: 0 = Unsatisfactory 1 = Poor 2 = Average 3 = Good 4 = Very Good 5 = Excellent

- 0 = Unsatisfactory** The Submission is Unsatisfactory with the Proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor** The Proponent barely satisfies the criteria. Significant risk may exist if proceeding with the supplier and would require major effort to develop a satisfactory performance level.
- 2 = Average** The Proponent is able to satisfy the criteria but further evidence and information is required to test and substantiate performance level claims.
- 3 = Good** The Proponent has demonstrated that the criteria have been clearly satisfied and that they understand the requirements substantiated by detailed explanation. Actual experience may be limited in some areas.
- 4 = Very Good** The Proponent has demonstrated that the criteria have been clearly satisfied and substantiated by experience in providing a significant level of beneficial insight and knowledge in the proposed solution.
- 5 = Excellent** The Proponent has clearly demonstrated that they satisfy or exceed the criteria by proposing a superior solution, substantiated with experience, knowledge and references.

		Evoke			Focal																							
Evaluation - Technical Proposal (Dept. to review)		85%																										
Evaluation Criteria	Weight	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score												
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%	s.13(1)						0.0%						0.0%														
Executive Summary Provide a brief executive summary of your Proposal.	5%																			0.0%								
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%																									0.0%		
Sustainability (Environmental and/or Social) - See Response to Supplier Diversity section/checklist to be completed by SCM	5%																											
SUBTOTAL OF TECHNICAL SCORES	85%	54.0%			79.0%			0.0%			0.0%																	

General Remarks (MANDATORY)	s.13(1)											
------------------------------------	---------	--	--	--	--	--	--	--	--	--	--	--

RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

Evaluation Guide: **0 = Unsatisfactory** **1 = Poor** **2 = Average** **3 = Good** **4 = Very Good** **5 = Excellent**

- 0 = Unsatisfactory** The Submission is Unsatisfactory with the Proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor** The Proponent barely satisfies the criteria. Significant risk may exist if proceeding with the supplier and would require major effort to develop a satisfactory performance level.
- 2 = Average** The Proponent is able to satisfy the criteria but further evidence and information is required to test and substantiate performance level claims.
- 3 = Good** The Proponent has demonstrated that the criteria have been clearly satisfied and that they understand the requirements substantiated by detailed explanation. Actual experience may be limited in some areas.
- 4 = Very Good** The Proponent has demonstrated that the criteria have been clearly satisfied and substantiated by experience in providing a significant level of beneficial insight and knowledge in the proposed solution.
- 5 = Excellent** The Proponent has clearly demonstrated that they satisfy or exceed the criteria by proposing a superior solution, substantiated with experience, knowledge and references.

		EVOKE			FOCAL		
Part 2 - Evaluation - Commercial Proposal (Purchasing to review)		15%					
<i>All Costs for Base Proposal or 'best' Alternative Proposal</i>	15%	Lowest Proposal \$/This Proposal x Weight =Weighted Score		Weighted Score	Lowest Proposal \$/This Proposal x Weight =Weighted Score		Weighted Score
Lowest Price		\$			70,000.00		
Bidder Price		\$ 70,000.00		15.0%	\$ 73,402.00		14.3%
TECHNICAL SCORES	85%	69.5%			83.2%		
TOTAL SCORE	100%	85%			97.5%		

Part 3 - Evaluation - Technical Proposal (Dept. to review)		60%										
Evaluation Criteria	Weight	Charling	Chris	Patrick	Score (0-5)	Weighted Score	Charling	Chris	Patrick	Score (0-5)	Weighted Score	
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%	s.13(1)										
Executive Summary Provide a brief executive summary of your Proposal.	5%											
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%											
Sustainability (completed by SCM):	5%											
SUBTOTAL OF TECHNICAL SCORES	85%					69.5%					83.2%	

General Remarks - Charling

General Remarks - Chris

General Remarks - Patrick

s.13(1)



From: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
To: "Kevin Leung" <kevin.leung@introba.com>
CC: "Ali Nazari" <ali.nazari@introba.com>
Date: 1/26/2023 6:46:00 AM
Subject: RE: City of Vancouver RFP No. PS20230002

Hi Kevin,

Thanks for letting me know, much appreciated.

Regards, Dino

From: Kevin Leung <kevin.leung@introba.com>
Sent: Wednesday, January 25, 2023 5:07 PM
To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Cc: Ali Nazari <ali.nazari@introba.com>
Subject: [EXT] RE: City of Vancouver RFP No. PS20230002

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Hi Dino,

Thank you for reaching out to us for this opportunity. Unfortunately, having reviewed the RFP in detail along with the proposed schedule and our team's current workload, we regrettably won't be able to pursue this opportunity.

We wish you all the best in your search for the qualified proponent and we look forward to working together on future opportunities.

Best Regards,
Kevin

Kevin Leung

P.ENG., BEMP, CPHC, LEED AP BD+C
Associate Principal



Vancouver, BC, Canada

D +1 604.687.1800 x2098

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From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>

Sent: January 17, 2023 7:11 AM

To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>

Subject: City of Vancouver RFP No. PS20230002

Some people who received this message don't often get email from dino.goundouvas@vancouver.ca [Learn why this is important \[aka.ms\]](#)

The City of Vancouver has issued Request for Proposal (RFP) PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

Please find the attached RFP document containing the submission instructions and detailed requirements.

Please note some key dates listed below:

Deadline for Enquiries - 12:00pm (Noon), Wednesday, February 1, 2023

Closing Time- 3:00pm, Monday, February 6, 2023

Please be advised this is not a public call for proposal however, any questions or clarifications that are submitted for response will be issued to all short listed proponents.

Dino Goundouvas
Contracting Specialist
City of Vancouver
Supply Chain Management
604.871.6812

From: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
To: "Li, Charling" <charling.li@vancouver.ca>
Date: 1/31/2023 3:21:00 PM
Subject: RE: Inquiry for PS20230002 Energy Modelling Guidelines Update

Perfect, thanks Charling. I'll respond to Evoke with comments as noted below!

From: Li, Charling <charling.li@vancouver.ca>
Sent: Tuesday, January 31, 2023 3:14 PM
To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Subject: RE: Inquiry for PS20230002 Energy Modelling Guidelines Update

Hi Dino, please see my comments in red below to your question and the inquiry.

Thanks!

Charling

From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Sent: Tuesday, January 31, 2023 12:38 PM
To: Li, Charling <charling.li@vancouver.ca>
Subject: FW: Inquiry for PS20230002 Energy Modelling Guidelines Update

Hi Charling,

I received the inquiry below from Evoke Buildings. I'm guessing that one of the other invites/short list sent them the RFP which is not wrong (although) they should have asked first).

Prior to responding wanted to touch base with you if you want them to participate in the RFP process? I'm fine with Evoke submitting a proposal on their own if they'd like. They could also partner with one of the other proponents if they'd like. I'm interested in getting a good team together, whether they are part of the same firm or not.

Thanks, Dino

From: Alex Blue <ablue@EvokeBuildings.com>
Sent: Tuesday, January 31, 2023 11:43 AM
To: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Subject: [EXT] Inquiry for PS20230002 Energy Modelling Guidelines Update

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Hello Dino,

A couple of inquiries related to the above-mentioned RFP:

- 1) Is the RFP by invitation only? We were not able to find the RFP on the City's procurement website.
 - a. If yes, if we were not invited but feel we can put forward a qualified team, can we still submit?
- 2) Are proponents able to attach additional information to the proposal form, such as resumes or additional project references? **Fine by me.**
- 3) Will the workshops be by invitation only?
 - a. If yes, will the City develop the invitation list? **The invitation list for workshop #1 will be developed with input from the successful proponent. Workshop #2 will be open invitation and the proponent is expected to help distribute the invitation to their networks.**
 - b. If no, will the City distribute information regarding the workshops through their networks?
- 4) Will the survey be widely distributed beyond the workshops? Can the City provide any estimate of the number of anticipated survey responses? **The survey is expected to be distributed through the workshops and posted through networks. We don't have an estimated number of anticipated survey responses.**

Thank you,

Alex Blue, P.Eng., LEED AP BD+C, BEMP

Principal, Building Energy Specialist

O : 604.260.1124 ext. 803

C : 604.715.5886

250 - 997 Seymour Street, Vancouver BC





REQUEST FOR PROPOSALS

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

RFP No. PS20230002

Issue Date: January 17, 2023

Issued by: City of Vancouver (the "City")

SUMMARY

The intent of this RFP is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025

PART A INSTRUCTIONS AND INFORMATION

1.0 INSTRUCTIONS

1.1 The City is interested in selecting an entity (each, a “**Proponent**”) that submits a proposal (each, a “**Proposal**”) with the capability and experience to efficiently and cost-effectively meet the requirements described in this RFP. The City expects to select a Proponent to enter into contract negotiations. The term of any agreement is expected to be approximately Six months with possible extensions to complete the work.

However, the City may: (i) decline to select any Proponent; (ii) decline to enter into any agreement; (iii) select multiple Proponents for negotiation; or (iv) enter into one or more agreements respecting the subject matter of the RFP with one or more Proponents or other entities at any time. The City may also terminate the RFP at any time.

1.2 Proponents should submit their proposals on or before 3:00pm on the 6th day of February, 2023 (the “**Closing Time**”) by email in accordance with the following:

- Subject of the file to be: PS# - Title - Vendor name.
- Document format for submissions:
 - RFP Appendix 1 in PDF format - 1 combined PDF file,
 - Any other attachments if necessary
- Zip the files to reduce the size or email separately if needed.
- Send your submissions to dino.goundouvas@vancouver.ca; do not deliver a physical copy to the City of Vancouver.
- Submitting the files via Drop box, FTP, or similar programs, is not acceptable.
- Inquiries related to this RFP must be sent to dino.goundouvas@vancouver.ca by 12pm, February 1, 2023
- Due to cybersecurity concerns, the City of Vancouver will quarantine any inbound email with attachments not in PDF or Microsoft Office formats which will result in non-delivery to Supply Chain Management and will be deemed not submitted. Non-compliant file formats will be detected and quarantined even if they are compressed, zipped, renamed, and include password protected zipped files.
- The maximum number of attachments allowed in an email message is 10 attachments.
- The maximum size limit for an email message, including all attachments, is 10MB per message.

- 1.3 To be considered by the City, a Proposal must be submitted in the form set out in Appendix 1 (the "Proposal Form"), completed and duly executed by the relevant Proponent.
- 1.4 Amendments to a Proposal may be submitted via the same methods, at any time prior to the Closing Time. Proposals are revocable and may be withdrawn at any time before or after the Closing Time.
- 1.5 Proposals that are submitted after the Closing Time or that otherwise do not comply in full with the terms hereof may or may not be considered by the City and may or may not be returned to the Proponent, in the City's sole discretion.
- 1.6 All enquiries must be made in writing and are to be directed only to the above contact person. In-person or telephone enquiries are not permitted. Any communication from potential Proponents to City staff other than the contact person regarding the content of this RFP may lead to disqualification of the Proponent from this RFP process, at the City's sole discretion.

2.0 THIS SECTION HAS BEEN INTENTIONALLY DELETED

3.0 EVALUATION OF PROPOSALS

- 3.1 The City currently intends that all Proposals submitted to it in accordance with the RFP will be evaluated by City representatives, using quantitative and qualitative tools and assessments, as appropriate, to determine which Proposal or Proposals offer the overall best value to the City. In so doing, the City expects to examine:

Evaluation Criteria	Evaluation Weighting
Technical	65%
Financial	30%
Sustainability (Environmental and/or Social)	5%
Total	100%

4.0 CITY'S DISCRETION

- 4.1 For the avoidance of doubt, notwithstanding any other provision in the RFP, the City has in its sole discretion, the unfettered right to: (a) accept any Proposal; (b) reject any Proposal; (c) reject all Proposals; (d) accept a Proposal which is not the lowest-price proposal; (e) accept a Proposal that deviates from the Scope of Work or the conditions specified in the RFP; (f) reject a Proposal even if it is the only Proposal received by the City; (g) accept all or any part of a Proposal; (h) split the Scope of Work between one or more Proponents; and (i) enter into one or more agreements respecting the subject matter of the RFP with any entity or entities at any time. Without limiting the foregoing, the City may reject any Proposal by a Proponent that has a conflict of interest, has engaged in collusion with another Proponent or has otherwise attempted to influence the outcome of the RFP other than through the submission of its Proposal.

5.0 LEGAL TERMS AND CONDITIONS

- 5.1 The legal obligations of a Proponent that will arise upon the submission of its Proposal are stated in Appendix 2. Except where expressly stated in these Legal Terms and Conditions:

(i) no part of the RFP consists of an offer by the City to enter into any contractual relationship; and (ii) no part of the RFP is legally binding on the City. EXCEPT WHERE EXPRESSLY STATED OTHERWISE IN APPENDIX 2: (I) NO PART OF THE RFP CONSISTS OF AN OFFER BY THE CITY TO ENTER INTO ANY CONTRACTUAL RELATIONSHIP; AND (II) NO PART OF THE RFP IS LEGALLY BINDING ON THE CITY.

POTENTIAL PROPONENTS MUST REVIEW THESE LEGAL TERMS AND CONDITIONS CAREFULLY BEFORE SUBMITTING A PROPOSAL.

PART B SCOPE OF WORK

The scope of work stated in this Part B (collectively, the “Scope of Work”) IS current as of the date hereof, but may change or be refined in the course of the evaluation of Proposals or otherwise.

2023 Energy Modelling Guidelines Update

Request for Proposals: Scope of Work

Schedule

The anticipated delivery date of draft results is: Monday, May 15th, 2023

The anticipated dates of 2 proposed workshops are: Week of June 5th, 2023

The anticipated delivery date of final results is: Monday July 10th, 2023

Background

The Zero Emissions Building Plan (ZEBP¹) seeks to reduce the operational emissions of new construction in Vancouver to zero by 2030. Changes to the Vancouver Building By-law (VBBL) were approved in May 2022 to reduce greenhouse gas intensity (GHGI) targets consistent with zero emissions heating and hot water equipment for Part 3 new construction, as well as more stringent targets on climate resilience. The City of Vancouver’s Energy Modelling Guidelines (EMGs) version 2.0 needs to be updated to consolidate feedback and new knowledge that has emerged since the release of version 2.0 in July 2018.

The EMGs are used by projects to demonstrate compliance to the energy and emissions limits in the Vancouver Building By-law and is also referenced by the BC Building Code in the application of the Energy Step Code (ESC) for Part 3 buildings. While the focus of the update will be to reflect Vancouver’s context, proponents are encouraged to consider the implications of these updates to users of the provincial ESC and lead discussions on these implications at the stakeholder workshops (see Deliverables).

Intent

The intent of this scope of work is to update the City of Vancouver’s Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025².

Scope

Throughout the delivery of this scope of work, the proponent should consider applicability or constraints of the common energy modelling software used by modelling professionals in BC for Part 3 large new buildings. Proposed modelling methodologies should work for these modelling software; otherwise provide a recommendation on whether specific software should no longer be used for the purposes of compliance modelling for VBBL or ESC.

¹<https://vancouver.ca/files/cov/zero-emissions-building-plan.pdf>

² <https://council.vancouver.ca/20220517/documents/R1a.pdf#page=34>

It is up to the proponent to propose the necessary methodology to arrive at and justify each recommended change to the EMGs based on the scope items outlined below. Some recommendations may be based on professional judgment and experience of the proponent, while others may require some energy modelling effort to arrive at the recommended approach.

This scope of work is not intended to be an extensive modelling exercise. The energy modelling scope item 14) is meant to provide an overall summary to understand the impact to energy and emissions metrics based on by major impacts such as updated weather files, changes in DHW assumptions, and ventilation standards, etc. Proponents are expected to have access to recent and relevant completed energy models of Part 3 new buildings of different sizes to draw from for the purposes to arriving at the recommendations.

The scope of work consists of the following needs:

1) Weather files

- a) Recommend a change to the standard weather file for demonstrating compliance to VBBL from CWEC 2016 to CWEC 2020 or to another weather file. The intent is to reflect best currently available information to demonstrate compliance to VBBL energy & emissions limits at the time of design.
- b) Recommend standard weather file(s) for completing sensitivity analysis under future climate conditions (e.g. specify climate files with time-scale and Representative Concentration Pathway, or source of climate files, etc.) or the use of Reference Summer Weather Years³. See also Section 5).

2) Domestic hot water

- a) Provide recommendations on whether to include the following changes as per the recommendations of the report “Calibrating the Zero Emissions Building Plan and BC Energy Step Code”⁴
 - increasing peak load assumption to 0.0021L/s/person (Section 3.1.4.1 of the report)
 - adopting a seasonal multiplier to DHW use (Section 3.1.4.2)
 - adopting a recirculation DHW heat loss factor (Section 3.1.4.3)
 - adopting a multiplier for non-submetered DHW (Section 3.1.4.5)
- b) Suggest any other recommendations to improve modelling of domestic hot water use, if any.

3) Ventilation Standard

Provide advice on the implications of the changes to TEDI, TEUI, GHGI and CEDI using ventilation rates in ASHRAE 62.1 -2016 Ventilation and Acceptable Indoor Air Quality as opposed to current VBBL referenced ASHRAE 62.1-2001 for ventilation.

4) Overheating analysis for Passive Cooled Buildings

³ <https://nrc-publications.canada.ca/eng/view/object/?id=abcd0186-37f3-4051-b752-688f04b7063c>

⁴ Crosby, S. 2019. “Calibrating the Zero Emissions Building Plan and BC Energy Step Code” Report for the Greenest City Scholars Program. https://www.researchgate.net/profile/Sarah-Crosby-2/publication/336654063_Calibrating_the_Zero_Emissions_Building_Plan_and_BC_Energy_Step_Code/links/5e583818a6fdccbeba079aa4/Calibrating-the-Zero-Emissions-Building-Plan-and-BC-Energy-Step-Code.pdf

Recommend standardized assumptions for estimating the number of overheating hours for passively cooled buildings (section 4 of the EMGs) for the purposes of demonstrating compliance with overheating limits within VBBL and ESC. The proposed methodology or assumptions should apply to common natural ventilation and other passive cooling strategies and be simple to apply across different project designs and conditions. Include guidance on the following:

- a) Modelling natural ventilation and shading – for example, how window/patio door opening areas are calculated, how much airflow through openings, schedules of operation, external or internal operable shading.
- b) Occupant assumptions such as clothing, metabolic rate, local airspeed, etc.
- c) Other modelling assumptions such as thermal massing
- d) Recommend whether to require the calculation of operative temperature instead of dry bulb temperature in thermal comfort/overheating analysis based on ASHRAE 55 Section 5.3. Include any technical or software constraints associated with this recommendation.
- e) Recommend changes to the values in Table 4 “Acceptability Limits for Naturally Conditions Spaces in Vancouver” in Section 4 of the EMGs to a standard minimum value across all month, with the intent to accommodate projects outside of Vancouver conducting overheating hours analysis for ESC compliance.

5) Resilience to future climate and shock events

- a) For buildings with partial cooling or no active cooling: recommend a methodology for sensitivity analysis of how the number of overheating hours will shift in the future, such as time period to be modelled, the weather files to be used, etc.
- b) For buildings with active cooling: recommend a methodology for sensitivity analysis of overheating hours in the event of a power outage. Suggest a scenario and set parameters for analysis such as the duration of the power outage, the time period to be modelled, the weather files to be used, the number of overheating hours above a thermal safety threshold temperature, etc. Suggest an approach to encourage design teams to explore additional ways to reduce overheating hours during a power outage with the intent to improve the passive survivability of the building.
- c) Recommend a standard methodology and weather files to be used to analyze and report on how peak cooling and heating loads, TEDI, TEUI, GHGI and CEDI change between current and future climate scenarios. Include recommendations on how this information may be presented in the Energy & Emissions Design Report.

6) Cooling Energy Demand Intensity

Establish a standard methodology for calculating cooling energy demand intensity applicable to all building designs including those with full, partial or no mechanical cooling systems.

7) Refrigerant impact – GHGI-R

Projects will be required to account for the greenhouse gas impacts of refrigerants (GHGI-R) in the whole-building GHGI limit as of January 2025. Draft a new guidance section in the EMGs on GHGI-R that includes the following:

- a) Provide recommendation on incorporating GHGI-R estimates in early design for whole building GHGI compliance, based on existing available resources⁵. Reference existing GHGI-R calculation methodology from the Green Buildings Policy for Rezoning – Process and Requirements (amended June 14, 2019)⁶ to the EMGs and recommend updates to the methodology as necessary.
- b) Recommend whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume of refrigerant (nominally 225g)⁷ or a specific cooling capacity (19kW)⁸, or align with any other relevant standards or regulations.
- c) Update the definition of GHGI to include refrigerant impact.

8) Compliance for actively cooled buildings

As of January 2025, dwelling units within Part 3 buildings will be required to have active mechanical cooling capable to maintaining an indoor air temperature of 26°C with windows closed. Provide a recommendation on how compliance may be demonstrated through energy modelling. For example, the weather files and/or peak design condition to be used, the time period to be modelled, any mechanical system details or other compliance information or metrics to be provided by the design and modelling team, etc. Provide insight on any changes to the design and modelling teams' workflow that may be required to demonstrate compliance.

9) Form Factor for slim buildings' TEDI targets

Propose an adjustment factor for small and/or narrow buildings where TEDI targets may be difficult to achieve due to its form factor.

10) Energy efficiency recommendations

Provide technical and policy recommendation on the following items with the intent to further encourage selection of more energy efficient options:

- a. Appliances: should the current credit for EnergyStar appliances for TEUI continue, or should the default modelling assumptions for these appliances be adjusted to Energy Star requirements?
- b. Lighting – is an update to modelling assumptions for lighting necessary and are there other mechanisms to drive better more energy efficient lighting design
- c. Elevators – propose a revision to the current assumption on elevator load or an alternative modelling method to encourage the selection of more efficient elevators
- d. Laundry appliances – does the current assumptions on modelling in-suite laundry require updating?

11) Miscellaneous recommendations

Provide technical and policy recommendations on the following items. Some questions are provided as a starting point for consideration; the proponent is encouraged to provide additional perspectives as they see fit.

- a) Clarify the application of the corridor pressurization adjustment for buildings using energy/heat recovery ventilation systems for corridor supply and return air

⁵ <https://vancouver.ca/files/cov/refrigerant-impact-ghgi-study.pdf>

⁶ <https://vancouver.ca/files/cov/bulletin-green-buildings-policy-for-rezoning-2019-june14.pdf>

⁷ Based on LEED v4 Credit Enhanced Refrigerant Management

⁸ Based on Zero Carbon Buildings v3

- b) The reduction of maximum corridor pressurization adjustment value for TEDI and TEUI to 5
 - c) The removal of the corridor pressurization adjustment for GHGI
 - d) What space uses/types should be included within the building's Modelled Floor Area and Gross Floor Area (e.g. below grade storage or bike storage), and justifications based on anticipate impact on TEDI, TEUI, GHGI, CEDI metrics, etc.
 - e) Recommend changes to the current sub-metering adjustment for hot water for space heating (see 2.7 of the EMGs), if any. Consider whether the adjustment should be removed for simplicity and/or practicality, or if the adjustment should be expanded to include TEDI and DHW heating.
 - f) Recommend whether any further clarifications are needed on the role of the energy modelling professional making reference to the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services⁹
- 12) GHG reduction target methodology for Groups A, B, and F major occupancies
Draft guidance language on the modelling steps for Groups A, B and F major occupancies with GHG reduction targets in VBBL to determine the GHG reduction target based on an all fossil-fuel baseline modelled as per ASHRAE or NECB requirements. If different modelling steps are required for ASHRAE or NECB projects or for different modelling software, provide guidance for different cases.
- 13) Review CSA Z5020 Building Energy Modelling Standard
Provide a high-level review of the soon-to-be published *CSA Z5020 Building Energy Modelling Standard* to identify any significant differences to technical modelling procedures or assumptions compared to the EMGs; provide recommendations on changes to EMGs if necessary.
- 14) Energy Modelling & Report
- a) Apply at least two archetype buildings (at least one 6-storey residential, one 7+ storey residential, etc.) that include typical buildings systems meeting current VBBL requirements, modelled under the methodologies and assumptions outlined in v2.0 of the EMGs and compare the modelled results with the major recommendations from the above list. Provide comparison of how TEDI, TEUI, CEDI, GHGI and overheating hours are affected by the recommended changes. In responding to this RFP, the proponent should specify the methodology for this step.
 - b) Provide a brief report on how various components of building energy usage may be affected by the changes listed above, along with the proponent's list of recommended changes. The report should also provide brief commentary on any significant changes to energy modelling or design workflow related to the recommended changes.
- 15) Engagement with stakeholders
Organize and facilitate a minimum of 2 (two) virtual workshops to share proposed changes to the following groups and gather feedback in June 2023. Create an online survey to collect

⁹<https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW7JPMODAJKVYBCLHGRA24FJJPH3/Whole%20Building%20Energy%20Modelling%20Services>

written feedback to a draft version of the EMG changes. The survey should be made live in time for the workshops and remain open for 4 weeks.

- a) Workshop #1 with stakeholders to include relevant code compliance professionals from BC's Climate Action Secretariat, Building & Safety Standards Branch, BC Housing, BC Hydro, local municipalities etc., with approximate 10-20 individuals
- b) Workshop #2 with local energy modelling professionals (approximately 25-50 individuals)

Deliverables

The project will result in the following deliverables to the City:

- 1) Meetings with City staff as appropriate, including at a minimum:
 - a. Kick-off meeting to review scope and clarify assumptions;
 - b. Regular progress updates, bi-weekly as needed;
 - c. Presentation and review of preliminary findings with core City staff;
 - d. Organize and facilitate two workshops to share proposed changes to industry stakeholders, and to gather input on practical, technical or software issues and opportunities
 - e. Online survey to gather feedback from draft EMG changes
- 2) A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved;
- 3) A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI; and
- 4) A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.

**APPENDIX 1
PROPOSAL FORM**

**RFP No. PS20230002, CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE (the
"RFP")**

Proponent's Name: _____
"Proponent"

Address: _____

Jurisdiction of Legal Organization: _____

Date of Legal Organization: _____

Key Contact Person: _____

Telephone: _____

E-mail: _____

The Proponent, having carefully examined and read the RFP, including all amendments thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 2 to the RFP.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Executive Summary

Provide a brief executive summary of your Proposal.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

References	
Client Name # 1	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	
Client Name # 2	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	
Client Name # 3	
Address (City and Country)	
Contact Name	

Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

<p>Subcontractors</p> <p>List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).</p>

<p>Declaration of Supplier Code of Conduct</p> <p>The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") <https://policy.vancouver.ca/AF01401P1.pdf>, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.</p> <p>As an authorized signatory of _____ (<i>vendor name</i>), I declare that I have reviewed the SCC and to the best of my knowledge, _____ (<i>vendor name</i>) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of _____ (<i>vendor name</i>).</p> <p>Signature: _____</p> <p>Name and Title: _____</p> <p>Exceptions to Declaration:</p>

Conflicts, Collusion, Lobbying

See Article 9 of Appendix 2 for instructions.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:		
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			\$

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
		\$
		\$
		\$
		\$
		\$

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

<p>Majority owned/controlled/ by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Women <input type="checkbox"/> Indigenous Peoples <input type="checkbox"/> Non-Profit/Charity (Social Enterprise) <input type="checkbox"/> Coop <input type="checkbox"/> Community Contribution Corporation (3C/CCC) <input type="checkbox"/> Ethno-cultural Persons <input type="checkbox"/> People with Disabilities <input type="checkbox"/> LGBTQ+ <input type="checkbox"/> Other: please indicate 	<p>Workforce Diversity:</p> <ul style="list-style-type: none"> % Women % Indigenous Peoples % Ethno-cultural People % People with Disabilities % LGBTQ+ % Other: please indicate 	<p>Social / Environmental Certifications</p> <ul style="list-style-type: none"> <input type="checkbox"/> BCorp <input type="checkbox"/> BuySocial <input type="checkbox"/> Supplier Diversity Certification <input type="checkbox"/> Fairtrade <input type="checkbox"/> Green Business Certification (ie. LEED, ClimateSmart) <input type="checkbox"/> Other: please indicate
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**APPENDIX 2
LEGAL TERMS AND CONDITIONS OF RFP**

1. APPLICATION OF THESE LEGAL TERMS AND CONDITIONS

These legal terms and conditions set out the City's and the Proponent's legal rights and obligations only with respect to the RFP proposal process and any evaluation, selection, negotiation or other related process. In no event will the legal terms and conditions of this Appendix 2 apply to, or have the effect of supplementing, any Contract formed between the City and the Proponent, or otherwise apply as between the Proponent and the City following the signing of any such Contract.

2. DEFINITIONS

In this Appendix 2, the following terms have the following meanings:

- (a) "City" means the City of Vancouver, a municipal corporation continued pursuant to the Vancouver Charter.
- (b) "Contract" means a legal agreement, if any, entered into between the City and the Proponent following and as a result of the Proponent's selection by the City in the City's RFP process.
- (c) "Losses" means, in respect of any matter, all direct or indirect, as well as consequential: claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement whether from a third person or otherwise).
- (d) "Proponent" means the legal entity which has signed the Proposal Form, and "proponent" means any proponent responding to the RFP, excluding or including the Proponent, as the context requires.
- (e) "Proposal" means the package of documents consisting of the Proposal Form (including this Appendix 2), the Proponent's proposal submitted under cover of the Proposal Form, and all schedules, appendices and accompanying documents, and "proposal" means any proposal submitted by any proponent, excluding or including the Proponent, as the context requires.
- (f) "Proposal Form" means Appendix 2 of the RFP, as completed and executed by the Proponent.
- (g) "RFP" means the document issued by the City as Request for Proposals No. PS20230002, as amended from time to time and including all addenda.

3. NO LEGAL OBLIGATION ASSUMED BY THE CITY

Despite any other term of the RFP or the Proposal Form, including this Appendix 2 (except only Sections 7, 8.2 and 10 of this Appendix 2, in each case to the extent applicable), the City assumes no legal duty or obligation to the Proponent or to any proposed subcontractor in respect of the RFP, its subject matter or the Proposal unless and until the City enters into a Contract, which the City may decline to do in the City's sole discretion.

4. NO DUTY OF CARE OR FAIRNESS TO THE PROPONENT

The City is a public body required by law to act in the public interest. In no event, however, does the City owe *to the Proponent or to any of the Proponent's proposed subcontractors* (as opposed to the public) any contract or tort law duty of care, fairness, impartiality or procedural fairness in the RFP process, or any contract or tort law duty to preserve the integrity of the RFP process. The Proponent hereby waives and releases the City from any and all such duties and expressly assumes the risk of all Losses arising from participating in the RFP process on this basis.

5. EVALUATION OF PROPOSALS

5.1 Compliance / Non-Compliance

Any proposal which contains an error, omission or misstatement, which contains qualifying conditions, which does not fully address all of the requirements or expectations of the RFP, or which otherwise fails to conform to the RFP may or may not be rejected by the City at the City's sole discretion. The City may also invite a proponent to adjust its proposal to remedy any such problem, without providing the other proponents an opportunity to amend their proposals.

5.2 Reservation of Complete Control over Process

The City reserves the right to retain complete control over the RFP and proposal processes at all times. Accordingly, the City is not legally obligated to review, consider or evaluate the proposals, or any particular proposal, and need not necessarily review, consider or evaluate the proposals, or any particular proposal, in accordance with the procedures set out in the RFP, and the City reserves the right to continue, interrupt, cease or modify its review, evaluation and negotiation processes in respect of any or all proposals at any time without further explanation or notification to any proponents.

5.3 Discussions/Negotiations

The City may, at any time prior to signing a Contract, discuss or negotiate changes to the scope of the RFP, any proposal or any proposed agreement with any one or more of the proponents without having any duty or obligation to advise the Proponent or to allow the Proponent to vary its Proposal as a result of such discussions or negotiations with other proponents or changes to the RFP or such proposals or proposed agreements, and, without limiting the general scope of Section 6 of this Appendix 2, the City will have no liability to the Proponent as a result of such discussions, negotiations or changes.

5.4 Acceptance or Rejection of Proposals

The City has in its sole discretion, the unfettered right to: accept any proposal; reject any proposal; reject all proposals; accept a proposal which is not the lowest-price proposal; accept a proposal that deviates from the requirements of the RFP or the conditions specified in the RFP; reject a proposal even if it is the only proposal received by the City; accept all or any part of a proposal; enter into agreements respecting the subject matter of the RFP with one or more proponents; or enter into one or more agreements respecting the subject matter of the RFP with any other person at any time.

6. PROTECTION OF CITY AGAINST LAWSUITS

6.1 Release by the Proponent

Except only and to the extent that the City is in breach of Section 8.2 of this Appendix 2, the Proponent now releases the City, its officials, its agents and its employees from all liability for any Losses incurred in connection with the RFP or the Proposal, including any Losses in connection with:

- (a) any alleged (or judicially determined) breach by the City or its officials, agents or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process,
- (c) the Proponent preparing and submitting the Proposal;
- (d) the City accepting or rejecting the Proposal or any other submission; or

- (e) the manner in which the City: reviews, considers, evaluates or negotiates any proposal; addresses or fails to address any proposal or proposals; resolves to enter into a Contract or not enter into a Contract or any similar agreement; or the identity of the proponent(s) or other persons, if any, with whom the City enters any agreement respecting the subject matter of the RFP.

6.2 Indemnity by the Proponent

Except only and to the extent that the City breaches Section 8.2 of this Appendix 2, the Proponent indemnifies and will protect, save and hold harmless the City, its officials, its agents and its employees from and against all Losses, in respect of any claim or threatened claim by the Proponent or any of its proposed subcontractors or agents alleging or pleading:

- (a) any alleged (or judicially determined) breach by the City or its officials or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process, or
- (c) liability on any other basis related to the RFP or the proposal process.

6.3 Limitation of City Liability

In the event that, with respect to anything relating to the RFP or this proposal process (except only and to the extent that the City breaches Section 8.2 of this Appendix 2), the City or its officials, agents or employees are found to have breached (including fundamentally breached) any duty or obligation of any kind to the Proponent or its subcontractors or agents whether at law or in equity or in contract or in tort, or are found liable to the Proponent or its subcontractors or agents on any basis or legal principle of any kind, the City's liability is limited to a maximum of \$100, despite any other term or agreement to the contrary.

7. DISPUTE RESOLUTION

Any dispute relating in any manner to the RFP or the proposal process (except to the extent that the City breaches this Section 7 or Section 8.2 of this Appendix 2, and also excepting any disputes arising between the City and the Proponent under a Contract (or a similar contract between the City and a proponent other than the Proponent)) will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:

- (a) The arbitrator will be selected by the City's Director of Legal Services;
- (b) Section 6 of this Appendix 2 will: (i) bind the City, the Proponent and the arbitrator; and (ii) survive any and all awards made by the arbitrator; and
- (c) The Proponent will bear all costs of the arbitration.

8. PROTECTION AND OWNERSHIP OF INFORMATION

8.1 RFP and Proposal Documents City's Property

- (a) All RFP-related documents provided to the Proponent by the City remain the property of the City and must be returned to the City, or destroyed, upon request by the City.

- (b) The documentation containing the Proposal, once submitted to the City, becomes the property of the City, and the City is under no obligation to return the Proposal to the Proponent.

8.2 Proponent's Submission Confidential

Subject to the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia), other applicable legal requirements, and the City's right to publicly disclose information about or from the Proposal, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the RFP, the City will treat the Proposal (and the City's evaluation of it), in confidence in substantially the same manner as it treats its own confidential material and information.

8.3 All City Information Confidential

- (a) The Proponent will not divulge or disclose to any third parties any non-public documents or information concerning the affairs of the City which have been or are in the future provided or communicated to the Proponent at any time (whether before, during or after the RFP process). Furthermore, the Proponent agrees that it has not and must not use or exploit any such non-public documents or information in any manner, including in submitting its Proposal.
- (b) The Proponent now irrevocably waives all rights it may have by statute, at law or in equity, to obtain any records produced or kept by the City in evaluating its Proposal (and any other submissions) and now agrees that under no circumstances will it make any application to the City or any court for disclosure of any records pertaining to the receipt, evaluation or selection of its Proposal (or any other submissions) including, without limitation, records relating only to the Proponent.

9. NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

9.1 Declaration as to no Conflict of Interest in RFP Process

- (a) The Proponent confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Proponent or of any of its proposed subcontractors, or any other person related to the Proponent's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is: (i) an official or employee of the City; or (ii) related to or has any business or family relationship with an elected official or employee of the City, in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Proposal by the City, and, in each case, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.
- (b) The Proponent confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the RFP obtained during his or her employment or engagement by the City, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.

9.2 Declaration as to No Conflict of Interest Respecting Proposed Supply

The Proponent confirms and warrants that neither the Proponent nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the RFP would create a conflict of interest or the appearance of a conflict of interest between the Proponent's duties to the City and the Proponent's or its subcontractors' duties to such third party, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.

9.3 Declaration as to No Collusion

The Proponent confirms and warrants that:

- (a) the Proponent is not competing within the RFP process with any entity with which it is legally or financially associated or affiliated, and
- (b) the Proponent is not cooperating in any manner in relation to the RFP with any other proponent responding to the RFP,

in each case, except as set out, in all material detail, in the section titled “Conflicts, Collusion, Lobbying” in the Proposal Form.

9.4 Declaration as to Lobbying

The Proponent confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and
- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the RFP or sought, other than through the submission of the Proposal, to influence the outcome of the RFP process,

in each case as set out, in all material detail, in the section titled “Conflicts, Collusion, Lobbying” in the Proposal Form.

10. GENERAL

- (a) All of the terms of this Appendix 2 to this Proposal Form which by their nature require performance or fulfillment following the conclusion of the proposal process will survive the conclusion of such process and will remain legally enforceable by and against the Proponent and the City.
- (b) The legal invalidity or unenforceability of any provision of this Appendix 2 will not affect the validity or enforceability of any other provision of this Appendix 2, which will remain in full force and effect.
- (c) The Proponent now assumes and agrees to bear all costs and expenses incurred by the Proponent in preparing its Proposal and participating in the RFP process.

APPENDIX 3
SAMPLE FORM OF AGREEMENT



PS20230002 - SERVICES CONTRACT

City of Vancouver (the “City”)

AND: <[legal name of other party]> (the “Contractor”)

having the following address:

453 West 12th Avenue

Vancouver, British Columbia, Canada

V5Y 1V4

Tel Number: [phone number of project manager]

Email: [email address of the project manager]

having the following address:

[address of other party]

Tel Number: [phone number]

Email: [email address]

Name of City Project Manager: []

This contract for services is comprised of this cover page, the following parts A, B, C, D and E, the attached Services Contract Terms and Conditions, and any other attachments, schedules, appendices or annexes expressly referred to in the aforementioned parts A, B, C, D and E, and the signature blocks following Part F below. By signing below, the City and the Contractor hereby agree to be bound by the terms of this contract.

PART A - SERVICES:

<  *Insert description.* >

[Note: Describe in detail what the services are, where they will be performed, who will be performing them, etc. Whenever necessary, supplement with a Schedule A further describing the services, as well as any delivery/performance schedule, milestones, etc.]

The Services are further described in Schedule A. <  **Delete if not included.** >

Start date for the Services: <  > (the "Start Date")

The Contractor agrees to complete the Services by: <  >

PART B - FEES AND EXPENSES:

Billing Date(s): See Section 20 of the Services Contract Terms and Conditions

Fees: <description>

[Insert description of fees and state which taxes will be charged in addition to the fees and/or which taxes are included in the fees.]

Definitions:

“GST” means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time.

Expenses: [Tick applicable ONE; tick one.]

- Reimbursable by the City but only in accordance with this Contract (see the Services Contract Terms and Conditions); or
- Not reimbursable (included in fees)

“PST” means the provincial sales tax payable and imposed pursuant to the Provincial Sales Tax Act (British Columbia), as amended or replaced from time to time.

Maximum Amount of Fees and Expenses (the “Maximum Amount”):

<description>

[Insert description of cap and state which taxes will be charged on top of the cap and/or which taxes are to be included in the cap.]

The fees and expenses are further described in Schedule B.

[Delete if not included.]

PART C: APPROVED SUBCONTRACTORS

<description> [Provide names or write “None”.]

PART D: INSURANCE

Without limiting any of its obligations or liabilities under this Services Contract, the Contractor will obtain and continuously carry and will cause its subcontractors to obtain and continuously carry during the term of the Services Contract at its own expense and cost, the following insurance coverages with minimum limits of not less than those shown in the respective items set out below:

- (a) Commercial general liability insurance with a limit of not less than \$5,000,000 per occurrence and a deductible of not more than \$5,000 or other such amounts as the City may approve from time to time, protecting the Contractor and the Contractor's personnel against all claims for bodily injury including death, personal injury, advertising liability, products liability, sudden & accidental pollution, completed operations, or property damage or loss, arising out of the operations of the Contractor or the actions of the Contractor or the Contractor's personnel. The policy will carry blanket contractual liability coverage, include a cross-liability clause in favour of the City, and will name the City and the City's officials, officers, employees and agents as additional insureds;
- (b) All-risks property insurance covering the Contractor's property of every description containing a provision in which the insurer waives all rights which it may acquire by payment of a claim to recover the paid amount from the City or its officials, officers, employees or agents; and
- (c) Automobile insurance covering all vehicles owned, leased, rented or operated by the Contractor in connection with this Services Contract, including third party legal liability insurance in an amount not less than \$5,000,000 per occurrence, or such other amount as the City may approve from time to time.

The Contractor and each of its subcontractors will provide at its own cost other lines of insurance coverages, endorsements, or increased limits of insurance as deemed necessary by the City and as a reasonable and prudent contractor would require to protect their operations or performance of services.

All insurance policies required by this Services Contract shall be with insurers duly authorized to carry on business in the Province of British Columbia, in a form and in amounts satisfactory from time to time and acceptable to the City's Director of Risk Management.

The required insurance shall not be cancelled or endorsed to reduce the limits of liability without thirty (30) days' written notice by registered mail to the City. Should the policy be endorsed to restrict coverage midterm, written notice of such restriction will be provided by registered mail to the City no later than the effective date of change; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply. Notice must identify the contract title, number, policy holder, and scope of work.

The Contractor's insurance policy (policies) shall be primary with respect to all claims arising out of the operations of the Contractor. Any insurance or self-insurance maintained by or on behalf of the City or its officials, officers, employees, or agents will be excess of the Contractor's insurance and will not contribute to it.

Neither the providing of insurance by the Contractor in accordance with this Agreement, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing will be held to relieve the Contractor from any other provisions of the Services Contract with respect to liability of the Contractor or otherwise.

Prior to the Start Date, the Contractor will provide the City with evidence of all required insurance in the form of a certificate of insurance satisfactory to the City. The certificate of insurance will identify the contract title, number, policyholder, and scope of work. The Contractor will provide proof of insurance, in the form of a certificate of insurance or certified copies of all insurance policies to the Manager, Contracts and Administration at any time immediately upon request.

The Contractor will provide in its agreements with its subcontractors clauses in the same form as in this Part D. Upon request, the Contractor will deposit with the City detailed certificates of insurance for the policies it has obtained from its subcontractors and a copy of the applicable insurance clauses from its sub-contract agreements.

PART E: ADDITIONAL TERMS

<☒> [Describe or write "None".]

The following are integral parts of this Services Contract:

- <☒name of first schedule>;
- <☒name of second schedule>; and
- <☒name of third schedule>.

[Delete if no attachments.]

The parties hereto have duly executed this Contract as of the <☒> day of <☒month>, 20<☒year>.

SIGNED AND DELIVERED on behalf of the City by its authorized signatory(ies):

SIGNED AND DELIVERED on behalf of the Contractor by its authorized signatory(ies):

Per: _____

[Name and Title]

Per: _____

[Name and Title]

SERVICES CONTRACT TERMS AND CONDITIONS

A. CONTRACTOR'S OBLIGATIONS

1. **Performance of Services.** The Contractor agrees to provide the City with the services described in PART A (and in any schedule referred to therein), including, without limitation, and to the extent not expressly described in PART A (or in any such schedule), all services necessary or incidental to the completion of the services contemplated and described therein (the "Services"), all in accordance with the Services Contract (this "Contract"). The Contractor must provide the Services commencing on the Start Date described in PART A and in accordance with the delivery schedule (if any) specified in PART A (or in any schedule referred to therein), regardless of the date of execution or delivery of this Contract. The Contractor must comply with the City's instructions in performing the Services, but unless otherwise specified herein, the Contractor shall at all times retain control over the manner in which those instructions are carried out.
2. **Provision of Service Inputs.** Unless otherwise specified herein, the Contractor must supply and pay for all labour, materials, permits and approvals (including from any relevant government authority) necessary or advisable to provide the Services.
3. **Standard of Care and Applicable Laws.** The Contractor must perform the Services to the standard of care, skill, and diligence prescribed herein, or where not prescribed herein, to the standard customarily maintained by persons providing, on a commercial basis, services similar to the Services, and in accordance with all statutes, regulations, by-laws, codes, rules, notices, orders, directives, standards and requirements of every competent federal, provincial, regional, municipal and other statutory authority applicable to the Contractor and its personnel and the Services.
4. **Warranty.** Without limitation to any additional warranties provided by the Contractor, whether indicated on the face of this contract or otherwise provided, the Contractor warrants that: (a) all goods, provided by the Contractor in connection with its performance of the Services ("Goods"), shall be of merchantable quality and free from defects in workmanship and materials; (b) all Goods shall strictly conform to applicable samples, specifications and drawings; (c) all Goods and Services shall be fit for the purpose intended by the City; (d) all Goods shall be free and clear of all liens, charges and encumbrances; (e) the Goods and Services shall comply with the standards set forth by applicable federal, provincial, municipal and industry regulatory agencies; (f) the shipping and handling of any hazardous material will be made in accordance with all applicable laws and regulations; and (g) the Goods and Services shall comply with all applicable environmental protection laws and regulations.

Unless a longer warranty period is specified on the face of this Contract or is otherwise provided, the foregoing warranty shall be valid for one year from the date of acceptance of the Goods and Services by the City. If at any time prior to the expiration of any applicable warranty period, any weakness, deficiency, failure, breakdown or deterioration in workmanship or material should appear or be discovered in the Goods and Services furnished by the Contractor, or if the Goods and Services do not conform to the terms and conditions of this Contract, the City may at its option (a) require the Contractor to promptly replace, redesign or correct the defective and non-conforming Goods and Services at no expense to the City, or (b) the City may replace or correct the defective Goods and Services and charge the Contractor with all expenses incurred by the City. The Contractor agrees to indemnify and save harmless the City, its officials, officers, employees, assigns, agents, clients and the public from any liability, loss, cost and expense arising either directly or indirectly, from breach of any warranty given by the Contractor hereunder.

5. **Contractor Personnel.** The Contractor must ensure that all persons it employs or retains to perform the Services are competent to perform them and are properly trained, instructed, and supervised, and that all such persons comply with the provisions of this Contract.
6. **Reporting.** The Contractor must, upon the City's request, fully report to the City on all work it does or has done in connection with providing the Services.
7. **Deliverables.** As a result of or as part of providing the Services, the Contractor may receive, create, produce, acquire or collect items including, without limitation, products, goods, equipment, supplies, models, prototypes and other materials; information and data; reports, drawings, plans, designs, depictions, specifications and other documentation (collectively, "Deliverables"). Deliverables do not include items that are: not required to be produced by the Contractor or supplied to the City as part of or together with the Services unless the City pays for such items; or specified in this Contract as being excluded from the Deliverables category; or items which pre-existed the effective date of this Agreement that are owned by a third party or that are used by the Contractor as part of the services provided to any of its other customers. All Deliverables will be owned solely by the City unless otherwise expressly provided herein and the City will have the complete right to use and deal with the Deliverables for its own benefit in any way it sees fit without limitation. The Contractor waives, in favour of the City, all moral rights in the Deliverables, transfers to the City, free of all liens and encumbrances, ownership of each Deliverable, and assigns all of its world-wide present and future rights, title and interest in and to each Deliverable, including copyright, effective as of the date of creation or acquisition of such Deliverable. The Contractor will permit the City to inspect and copy all Deliverables.
8. **Confidentiality.** The Contractor acknowledges that, in performing the Services required under this Contract, it may acquire information about matters which are confidential to the City, which information is the exclusive world-wide property of the City or its suppliers or citizens, as the case may be. The Contractor undertakes to treat as confidential all Deliverables and all information received by reason of its position as Contractor and agrees not to disclose the same to any third party either during or after the performance of the Services under this Contract, without the City's express prior written consent.
9. **Insurance.** The Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, the insurance coverage (if any) described in PART D (including the type and form of policy, the coverage amounts, and the amount of deductible). If no insurance coverage is specified in PART D, the Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, such insurance as would be obtained by a prudent consultant or contractor providing services similar to the Services. The Contractor must provide written proof of such insurance coverage upon the written request of the City.
10. **WorkSafeBC.** The Contractor agrees that it will procure and carry and pay for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or services performed in fulfilling this Contract have been paid in full. The Contractor will provide the City with the Contractor's and each subcontractor's WorkSafeBC registration number and clearance letters from WorkSafeBC confirming that the contractor and each subcontractor is in good standing with WorkSafeBC prior to the City having any obligation to pay monies under this Agreement.

Whenever the Contractor is required or permitted to perform any Services on any City sites, the Contractor is now appointed and now accepts appointment as the "prime contractor" in connection with such Services and will fulfil its obligations as Prime Contractor in accordance with the Workers Compensation Act (British Columbia), and the regulations thereunder, and the Contractor shall comply with all applicable health and safety laws.

11. **City Business Licence.** The Contractor will maintain a valid City of Vancouver business licence in good standing throughout the duration of this Contract.
12. **Resolution of Disputes.** This Contract will be governed by the laws of British Columbia and the parties now irrevocably attorn to the exclusive jurisdiction of, and agree to submit all disputes to, the courts of British Columbia for resolution. The Contractor shall continue performance of its obligations under this Contract notwithstanding the existence of a dispute.
13. **Independent Contractor.** This Contract is a contract for services and neither the Contractor nor the Contractor's personnel or permitted subcontractors, are, or deemed to be, partners, appointees, employees or agents of the City. The Contractor will not represent to anyone that the Contractor has any authority to bind the City or that the Contractor is an employee or agent of the City.
14. **No Assignment or Subcontracting.** The Contractor will not assign or subcontract (other than to persons listed in PART C (or a schedule referred to therein)), either directly or indirectly (including, without limitation, by way of any transfer of control of the shares or ownership interests in the Contractor), this Contract or any right or obligation of the Contractor under this Contract, without the prior written consent of the City, which consent may be arbitrarily withheld. No assignment or subcontract, whether consented to or not, relieves the Contractor from any obligations under this Contract. The Contractor must ensure that any assignee or subcontractor fully complies with this Contract in performing the Services and nothing in this Contract creates any contractual relationship between a subcontractor and the City.
15. **Conflict of Interest.** The Contractor must not provide any services to any person in circumstances which, in the City's reasonable opinion, could give rise to a conflict of interest between its duties to that person and its duties to the City under this Contract.

16. **Release and Indemnification**

a. **Release**

The Contractor now releases the City and the City's personnel from all losses including those caused by personal injury, death, property damage or loss, and economic loss, arising out of, suffered or experienced by the Contractor or the Contractor's personnel in connection with their performance of the Services.

b. **Acceptance "As Is"**

In undertaking the Services, the Contractor acknowledges that it has inspected the City's site(s), agrees to accept the site(s) "as-is" and undertakes to take all precautions necessary to ensure the safety of all the Contractor's personnel.

c. **Indemnity**

Despite any insurance which may be placed by the City, the Contractor now agrees to indemnify and save harmless the City and its officials, officers, employees, agents, successors, assigns and authorized representatives (in each case, an "Indemnified Party") from and against all costs, losses, claims, damages, actions and causes of action ("Claims") that an Indemnified Party may sustain, incur, suffer or be put to at any time either before or after the completion of the Services or sooner cancellation of this Contract, that arise out of any act or failure to act of the Contractor or the Contractor's personnel, permitted assignees or subcontractors in connection with the performance of this Contract, including any Claims that arise out of or are in any way related to unpaid WorkSafeBC assessments or the failure to observe safety rules, regulations and practices of WorkSafeBC, excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or negligent acts of an Indemnified Party.

d. **Separate from Other Remedies and Rights**

Nothing in this Contract (including this indemnity) will affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

e. **Survival of Release/Indemnity**

This Section 16 will survive the expiry or sooner termination of this Contract.

B. CHANGES TO SERVICES

17. **Changes.** The City may, at any time and from time to time and without invalidating this Contract, require a change to the Services and/or to the schedule for the delivery of the Services. Should the Contractor consider that any such request or instruction constitutes a change warranting amendment of the Maximum Amount, another price or the schedule for the Services set forth in the Contract, the Contractor must advise the City in writing prior to acting on any such request or instruction, and in any event within five (5) City of Vancouver business days of such request or instruction. In that case, the Maximum Amount, other price and/or schedule will be adjusted, if/as agreed to by both parties in writing, and failing agreement, if/as the City may determine, acting reasonably. Failing any such adjustment, the Services provided pursuant to the request or instruction will be deemed to be included within the prices specified herein, and to be subject to the schedule prescribed herein.

18. **Changes to Key Personnel.** The City may from time to time request reasonable changes to the key personnel of the Contractor engaged in performing the Services, and the Contractor shall comply with any such request. The Contractor shall not change any of such key personnel without the prior written approval of the City, which approval will not be unreasonably withheld.

C. PAYMENT

19. **Payment of Fees and Expenses.** In consideration for the satisfactory performance of the Services, The City will pay to the Contractor the fees specified in PART B (as supplemented by any schedule referred to therein), subject to this Section C. In addition, if the parties have specified in PART B that the Contractor's expenses are reimbursable in accordance with this Contract, the City will reimburse the Contractor for all expenses that: (i) are approved by the City in writing (in accordance with the City's existing policies and procedures for expense reimbursement) prior to their being incurred by the Contractor; (ii) are necessary, in the opinion of the City, to perform the Services; and (iii) are supported by proper receipts or other documentation satisfactory to the City (acting reasonably), provided always that the City reserves the right to make arrangements through its service providers for any flights and/or accommodations required by the Contractor in connection with its performance of the Services. If a "Maximum Amount" is specified in Part B, then the City is not, and shall not be, obliged to pay to the Contractor more than such Maximum Amount on account of aggregate fees (and, if applicable, expenses). Payment terms are "net 30 days" from the date of receipt of a valid invoice.

20. **Invoicing.** The Contractor will, by the 25th day of each month, provide to the City's Project Manager (named on the cover page of this Contract) a draft invoice with an attached detailed account of all charges to be claimed by the Contractor for the preceding month. The City's Project Manager shall review the draft, raise any concerns with the Contractor within ten working days and, after settlement of any issues (in the Project Manager's discretion), approve the draft invoice. The Contractor, if so requested, will meet with the City's Project Manager to expedite and settle the draft invoice. The Contractor will submit its final invoice, as per the approved draft invoice, to the City of Vancouver, Attention: Accounts Payable, by email to APInvoice@vancouver.ca. Each invoice must contain:

- Contractor name, address and telephone;
- City purchase order number;
- Name of the City's Project Manager;
- Invoice number and date;
- Details of any applicable taxes; and
- Tax registration number(s).

21. **Builders Lien Act.** If the Services to be performed under this Contract are subject to the holdback requirements set out in the *Builders Lien Act* (British Columbia) (the "Lien Act"), the City will withhold and discharge the required holdback amounts in accordance with the requirements set out in the Lien Act.

22. **Discharge of Liens and Withholding.** The Contractor will, if applicable, make payment and take all other steps which may be necessary so that no lien claims, including lien claims made under the Lien Act, are made in connection with the provision of the Services, and that the compensation payable to the Contractor by the City is not subject to attachment for debt, garnishing process or otherwise. In the event that any lien is filed in connection with the provision of the Services at any court or land title office, the Contractor shall immediately cause such lien to be discharged. The City may withhold from any payment due to the Contractor an amount sufficient to indemnify the City against any lien claim that could arise in connection with the provision of the Services, until such time as the lien has been discharged or other arrangements to satisfy such lien have been made by the Contractor.

23. **Withholding for Non-Residents.** If the Contractor is a non-resident of Canada, the City may withhold from any payment due to the Contractor such amounts as may be required to be withheld pursuant to the applicable provisions of the Canada *Income Tax Act* (the "ITA"). Any amount so withheld shall be remitted to the Receiver General for Canada or otherwise dealt with by the City strictly in accordance with the provisions of the ITA.

24. **Record Keeping.** The Contractor must maintain, and shall cause any subcontractors to maintain, time records and books of account, invoices, receipts, and vouchers of all expenses incurred, in form and content satisfactory to the City. The City or any of its authorized representatives will, for the purposes of audit and examination, have access and be permitted, upon reasonable notice to the Contractor, to inspect such records for review, copy and audit at any time and from time to time while this Contract is in effect and for a period of three years after the expiry or termination of this Contract for any reason.

25. **Currency.** Unless otherwise specified in this Contract, all references to money are to Canadian dollars.

26. **Electronic Funds Transfer.** The City expects to make payments by electronic funds transfer and the Contractor must provide banking information to the City in order to permit this.

D. GENERAL

27. **Time for Performance.** Time is of the essence in this Contract.
28. **Amendments.** No modification of this Contract is effective unless it is in writing and signed by all the parties.
29. **Entire Agreement.** This Contract constitutes the entire agreement between the parties as to performance of the Services, and replaces and supersedes any other agreements, correspondence or other discussions between the parties, whether or not any of the foregoing have been reduced to writing.
30. **Conflict.** If there is a conflict between a provision of a schedule to this Contract and the terms and conditions of this Services Contract, the provision in the relevant schedule is inoperative to the extent of the conflict unless it states that it operates despite a conflicting provision of this Contract.
31. **Severability.** If any provision of this Contract is determined to be void or unenforceable, in whole or in part, it shall not be deemed to affect or impair the enforceability or validity of any other provision of this Contract, and any such void or unenforceable provision may be severed from this Contract without affecting the remainder of the Contract.
32. **Termination.** The City may terminate this Contract:
- a. Upon failure of the Contractor to comply with this Contract, immediately on giving written notice of termination to the Contractor, or
 - b. For any other reason, on giving at least 10 days' written notice of termination to the Contractor.

If the City terminates this Contract under paragraph b. above, the City must pay the Contractor that portion of the fees and expenses described in PART B which equals the portion of the Services that was completed to the City's satisfaction before termination. That payment discharges the City from all liability to the Contractor under this Contract. If the Contractor fails to comply with this Contract, the City may terminate it and pursue other remedies as well.

33. **Binding Effect.** This Contract shall be binding on the Contractor's successors and permitted assigns and shall enure to the benefit of any successors and assigns of the City.
34. **Voluntary Agreement.** The Contractor acknowledges and declares that it has carefully considered and understood the terms of this Contract, that it has either consulted legal counsel or waived such right, and that it is executing this Contract voluntarily.
35. **Further Assurances.** The Contractor agrees that upon any reasonable request of the City, the Contractor will make, do, execute or cause to be made, done or executed all such other acts as may be required to more fully give effect to the terms and conditions hereof.
36. **Headings.** The headings used in the Parts and sections of this Contract are for convenience of reference only, and shall not operate to expand, modify or interpret the language therein.
37. **Counterparts.** This Contract may be executed in one or more counterparts, including by facsimile or other electronic transmission, and each of such counterparts shall be deemed to be taken together to constitute one and the same original document.
38. **Additional Terms:** The additional terms set out in Part E (or in any schedule referred to therein) apply to this Contract. **END OF TERMS AND CONDITIONS OF SERVICES CONTRACT**

[Add schedules.]



REQUEST FOR PROPOSALS

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

RFP No. PS20230002

Issue Date: January 17, 2023

Issued by: City of Vancouver (the "City")

SUMMARY

The intent of this RFP is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025

PART A INSTRUCTIONS AND INFORMATION

1.0 INSTRUCTIONS

1.1 The City is interested in selecting an entity (each, a “**Proponent**”) that submits a proposal (each, a “**Proposal**”) with the capability and experience to efficiently and cost-effectively meet the requirements described in this RFP. The City expects to select a Proponent to enter into contract negotiations. The term of any agreement is expected to be approximately Six months with possible extensions to complete the work.

However, the City may: (i) decline to select any Proponent; (ii) decline to enter into any agreement; (iii) select multiple Proponents for negotiation; or (iv) enter into one or more agreements respecting the subject matter of the RFP with one or more Proponents or other entities at any time. The City may also terminate the RFP at any time.

1.2 Proponents should submit their proposals on or before 3:00pm on the 6th day of February, 2023 (the “**Closing Time**”) by email in accordance with the following:

- Subject of the file to be: PS# - Title - Vendor name.
- Document format for submissions:
 - RFP Appendix 1 in PDF format - 1 combined PDF file,
 - Any other attachments if necessary
- Zip the files to reduce the size or email separately if needed.
- Send your submissions to dino.goundouvas@vancouver.ca; do not deliver a physical copy to the City of Vancouver.
- Submitting the files via Drop box, FTP, or similar programs, is not acceptable.
- Inquiries related to this RFP must be sent to dino.goundouvas@vancouver.ca by 12pm, February 1, 2023
- Due to cybersecurity concerns, the City of Vancouver will quarantine any inbound email with attachments not in PDF or Microsoft Office formats which will result in non-delivery to Supply Chain Management and will be deemed not submitted. Non-compliant file formats will be detected and quarantined even if they are compressed, zipped, renamed, and include password protected zipped files.
- The maximum number of attachments allowed in an email message is 10 attachments.
- The maximum size limit for an email message, including all attachments, is 10MB per message.

- 1.3 To be considered by the City, a Proposal must be submitted in the form set out in Appendix 1 (the "Proposal Form"), completed and duly executed by the relevant Proponent.
- 1.4 Amendments to a Proposal may be submitted via the same methods, at any time prior to the Closing Time. Proposals are revocable and may be withdrawn at any time before or after the Closing Time.
- 1.5 Proposals that are submitted after the Closing Time or that otherwise do not comply in full with the terms hereof may or may not be considered by the City and may or may not be returned to the Proponent, in the City's sole discretion.
- 1.6 All enquiries must be made in writing and are to be directed only to the above contact person. In-person or telephone enquiries are not permitted. Any communication from potential Proponents to City staff other than the contact person regarding the content of this RFP may lead to disqualification of the Proponent from this RFP process, at the City's sole discretion.

2.0 THIS SECTION HAS BEEN INTENTIONALLY DELETED

3.0 EVALUATION OF PROPOSALS

- 3.1 The City currently intends that all Proposals submitted to it in accordance with the RFP will be evaluated by City representatives, using quantitative and qualitative tools and assessments, as appropriate, to determine which Proposal or Proposals offer the overall best value to the City. In so doing, the City expects to examine:

Evaluation Criteria	Evaluation Weighting
Technical	65%
Financial	30%
Sustainability (Environmental and/or Social)	5%
Total	100%

4.0 CITY'S DISCRETION

- 4.1 For the avoidance of doubt, notwithstanding any other provision in the RFP, the City has in its sole discretion, the unfettered right to: (a) accept any Proposal; (b) reject any Proposal; (c) reject all Proposals; (d) accept a Proposal which is not the lowest-price proposal; (e) accept a Proposal that deviates from the Scope of Work or the conditions specified in the RFP; (f) reject a Proposal even if it is the only Proposal received by the City; (g) accept all or any part of a Proposal; (h) split the Scope of Work between one or more Proponents; and (i) enter into one or more agreements respecting the subject matter of the RFP with any entity or entities at any time. Without limiting the foregoing, the City may reject any Proposal by a Proponent that has a conflict of interest, has engaged in collusion with another Proponent or has otherwise attempted to influence the outcome of the RFP other than through the submission of its Proposal.

5.0 LEGAL TERMS AND CONDITIONS

- 5.1 The legal obligations of a Proponent that will arise upon the submission of its Proposal are stated in Appendix 2. Except where expressly stated in these Legal Terms and Conditions:

(i) no part of the RFP consists of an offer by the City to enter into any contractual relationship; and (ii) no part of the RFP is legally binding on the City. EXCEPT WHERE EXPRESSLY STATED OTHERWISE IN APPENDIX 2: (I) NO PART OF THE RFP CONSISTS OF AN OFFER BY THE CITY TO ENTER INTO ANY CONTRACTUAL RELATIONSHIP; AND (II) NO PART OF THE RFP IS LEGALLY BINDING ON THE CITY.

POTENTIAL PROPONENTS MUST REVIEW THESE LEGAL TERMS AND CONDITIONS CAREFULLY BEFORE SUBMITTING A PROPOSAL.

PART B SCOPE OF WORK

The scope of work stated in this Part B (collectively, the “Scope of Work”) IS current as of the date hereof, but may change or be refined in the course of the evaluation of Proposals or otherwise.

2023 Energy Modelling Guidelines Update

Request for Proposals: Scope of Work

Schedule

The anticipated delivery date of draft results is: Monday, May 15th, 2023

The anticipated dates of 2 proposed workshops are: Week of June 5th, 2023

The anticipated delivery date of final results is: Monday July 10th, 2023

Background

The Zero Emissions Building Plan (ZEBP¹) seeks to reduce the operational emissions of new construction in Vancouver to zero by 2030. Changes to the Vancouver Building By-law (VBBL) were approved in May 2022 to reduce greenhouse gas intensity (GHGI) targets consistent with zero emissions heating and hot water equipment for Part 3 new construction, as well as more stringent targets on climate resilience. The City of Vancouver’s Energy Modelling Guidelines (EMGs) version 2.0 needs to be updated to consolidate feedback and new knowledge that has emerged since the release of version 2.0 in July 2018.

The EMGs are used by projects to demonstrate compliance to the energy and emissions limits in the Vancouver Building By-law and is also referenced by the BC Building Code in the application of the Energy Step Code (ESC) for Part 3 buildings. While the focus of the update will be to reflect Vancouver’s context, proponents are encouraged to consider the implications of these updates to users of the provincial ESC and lead discussions on these implications at the stakeholder workshops (see Deliverables).

Intent

The intent of this scope of work is to update the City of Vancouver’s Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025².

Scope

Throughout the delivery of this scope of work, the proponent should consider applicability or constraints of the common energy modelling software used by modelling professionals in BC for Part 3 large new buildings. Proposed modelling methodologies should work for these modelling software; otherwise provide a recommendation on whether specific software should no longer be used for the purposes of compliance modelling for VBBL or ESC.

¹<https://vancouver.ca/files/cov/zero-emissions-building-plan.pdf>

² <https://council.vancouver.ca/20220517/documents/R1a.pdf#page=34>

It is up to the proponent to propose the necessary methodology to arrive at and justify each recommended change to the EMGs based on the scope items outlined below. Some recommendations may be based on professional judgment and experience of the proponent, while others may require some energy modelling effort to arrive at the recommended approach.

This scope of work is not intended to be an extensive modelling exercise. The energy modelling scope item 14) is meant to provide an overall summary to understand the impact to energy and emissions metrics based on by major impacts such as updated weather files, changes in DHW assumptions, and ventilation standards, etc. Proponents are expected to have access to recent and relevant completed energy models of Part 3 new buildings of different sizes to draw from for the purposes to arriving at the recommendations.

The scope of work consists of the following needs:

1) Weather files

- a) Recommend a change to the standard weather file for demonstrating compliance to VBBL from CWEC 2016 to CWEC 2020 or to another weather file. The intent is to reflect best currently available information to demonstrate compliance to VBBL energy & emissions limits at the time of design.
- b) Recommend standard weather file(s) for completing sensitivity analysis under future climate conditions (e.g. specify climate files with time-scale and Representative Concentration Pathway, or source of climate files, etc.) or the use of Reference Summer Weather Years³. See also Section 5).

2) Domestic hot water

- a) Provide recommendations on whether to include the following changes as per the recommendations of the report “Calibrating the Zero Emissions Building Plan and BC Energy Step Code”⁴
 - increasing peak load assumption to 0.0021L/s/person (Section 3.1.4.1 of the report)
 - adopting a seasonal multiplier to DHW use (Section 3.1.4.2)
 - adopting a recirculation DHW heat loss factor (Section 3.1.4.3)
 - adopting a multiplier for non-submetered DHW (Section 3.1.4.5)
- b) Suggest any other recommendations to improve modelling of domestic hot water use, if any.

3) Ventilation Standard

Provide advice on the implications of the changes to TEDI, TEUI, GHGI and CEDI using ventilation rates in ASHRAE 62.1 -2016 Ventilation and Acceptable Indoor Air Quality as opposed to current VBBL referenced ASHRAE 62.1-2001 for ventilation.

4) Overheating analysis for Passive Cooled Buildings

³ <https://nrc-publications.canada.ca/eng/view/object/?id=abcd0186-37f3-4051-b752-688f04b7063c>

⁴ Crosby, S. 2019. “Calibrating the Zero Emissions Building Plan and BC Energy Step Code” Report for the Greenest City Scholars Program. https://www.researchgate.net/profile/Sarah-Crosby-2/publication/336654063_Calibrating_the_Zero_Emissions_Building_Plan_and_BC_Energy_Step_Code/links/5e583818a6fdccbeba079aa4/Calibrating-the-Zero-Emissions-Building-Plan-and-BC-Energy-Step-Code.pdf

Recommend standardized assumptions for estimating the number of overheating hours for passively cooled buildings (section 4 of the EMGs) for the purposes of demonstrating compliance with overheating limits within VBBL and ESC. The proposed methodology or assumptions should apply to common natural ventilation and other passive cooling strategies and be simple to apply across different project designs and conditions. Include guidance on the following:

- a) Modelling natural ventilation and shading – for example, how window/patio door opening areas are calculated, how much airflow through openings, schedules of operation, external or internal operable shading.
- b) Occupant assumptions such as clothing, metabolic rate, local airspeed, etc.
- c) Other modelling assumptions such as thermal massing
- d) Recommend whether to require the calculation of operative temperature instead of dry bulb temperature in thermal comfort/overheating analysis based on ASHRAE 55 Section 5.3. Include any technical or software constraints associated with this recommendation.
- e) Recommend changes to the values in Table 4 “Acceptability Limits for Naturally Conditions Spaces in Vancouver” in Section 4 of the EMGs to a standard minimum value across all month, with the intent to accommodate projects outside of Vancouver conducting overheating hours analysis for ESC compliance.

5) Resilience to future climate and shock events

- a) For buildings with partial cooling or no active cooling: recommend a methodology for sensitivity analysis of how the number of overheating hours will shift in the future, such as time period to be modelled, the weather files to be used, etc.
- b) For buildings with active cooling: recommend a methodology for sensitivity analysis of overheating hours in the event of a power outage. Suggest a scenario and set parameters for analysis such as the duration of the power outage, the time period to be modelled, the weather files to be used, the number of overheating hours above a thermal safety threshold temperature, etc. Suggest an approach to encourage design teams to explore additional ways to reduce overheating hours during a power outage with the intent to improve the passive survivability of the building.
- c) Recommend a standard methodology and weather files to be used to analyze and report on how peak cooling and heating loads, TEDI, TEUI, GHGI and CEDI change between current and future climate scenarios. Include recommendations on how this information may be presented in the Energy & Emissions Design Report.

6) Cooling Energy Demand Intensity

Establish a standard methodology for calculating cooling energy demand intensity applicable to all building designs including those with full, partial or no mechanical cooling systems.

7) Refrigerant impact – GHGI-R

Projects will be required to account for the greenhouse gas impacts of refrigerants (GHGI-R) in the whole-building GHGI limit as of January 2025. Draft a new guidance section in the EMGs on GHGI-R that includes the following:

- a) Provide recommendation on incorporating GHGI-R estimates in early design for whole building GHGI compliance, based on existing available resources⁵. Reference existing GHGI-R calculation methodology from the Green Buildings Policy for Rezoning – Process and Requirements (amended June 14, 2019)⁶ to the EMGs and recommend updates to the methodology as necessary.
- b) Recommend whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume of refrigerant (nominally 225g)⁷ or a specific cooling capacity (19kW)⁸, or align with any other relevant standards or regulations.
- c) Update the definition of GHGI to include refrigerant impact.

8) Compliance for actively cooled buildings

As of January 2025, dwelling units within Part 3 buildings will be required to have active mechanical cooling capable to maintaining an indoor air temperature of 26°C with windows closed. Provide a recommendation on how compliance may be demonstrated through energy modelling. For example, the weather files and/or peak design condition to be used, the time period to be modelled, any mechanical system details or other compliance information or metrics to be provided by the design and modelling team, etc. Provide insight on any changes to the design and modelling teams' workflow that may be required to demonstrate compliance.

9) Form Factor for slim buildings' TEDI targets

Propose an adjustment factor for small and/or narrow buildings where TEDI targets may be difficult to achieve due to its form factor.

10) Energy efficiency recommendations

Provide technical and policy recommendation on the following items with the intent to further encourage selection of more energy efficient options:

- a. Appliances: should the current credit for EnergyStar appliances for TEUI continue, or should the default modelling assumptions for these appliances be adjusted to Energy Star requirements?
- b. Lighting – is an update to modelling assumptions for lighting necessary and are there other mechanisms to drive better more energy efficient lighting design
- c. Elevators – propose a revision to the current assumption on elevator load or an alternative modelling method to encourage the selection of more efficient elevators
- d. Laundry appliances – does the current assumptions on modelling in-suite laundry require updating?

11) Miscellaneous recommendations

Provide technical and policy recommendations on the following items. Some questions are provided as a starting point for consideration; the proponent is encouraged to provide additional perspectives as they see fit.

- a) Clarify the application of the corridor pressurization adjustment for buildings using energy/heat recovery ventilation systems for corridor supply and return air

⁵ <https://vancouver.ca/files/cov/refrigerant-impact-ghgi-study.pdf>

⁶ <https://vancouver.ca/files/cov/bulletin-green-buildings-policy-for-rezoning-2019-june14.pdf>

⁷ Based on LEED v4 Credit Enhanced Refrigerant Management

⁸ Based on Zero Carbon Buildings v3

- b) The reduction of maximum corridor pressurization adjustment value for TEDI and TEUI to 5
 - c) The removal of the corridor pressurization adjustment for GHGI
 - d) What space uses/types should be included within the building's Modelled Floor Area and Gross Floor Area (e.g. below grade storage or bike storage), and justifications based on anticipate impact on TEDI, TEUI, GHGI, CEDI metrics, etc.
 - e) Recommend changes to the current sub-metering adjustment for hot water for space heating (see 2.7 of the EMGs), if any. Consider whether the adjustment should be removed for simplicity and/or practicality, or if the adjustment should be expanded to include TEDI and DHW heating.
 - f) Recommend whether any further clarifications are needed on the role of the energy modelling professional making reference to the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services⁹
- 12) GHG reduction target methodology for Groups A, B, and F major occupancies
Draft guidance language on the modelling steps for Groups A, B and F major occupancies with GHG reduction targets in VBBL to determine the GHG reduction target based on an all fossil-fuel baseline modelled as per ASHRAE or NECB requirements. If different modelling steps are required for ASHRAE or NECB projects or for different modelling software, provide guidance for different cases.
- 13) Review CSA Z5020 Building Energy Modelling Standard
Provide a high-level review of the soon-to-be published *CSA Z5020 Building Energy Modelling Standard* to identify any significant differences to technical modelling procedures or assumptions compared to the EMGs; provide recommendations on changes to EMGs if necessary.
- 14) Energy Modelling & Report
- a) Apply at least two archetype buildings (at least one 6-storey residential, one 7+ storey residential, etc.) that include typical buildings systems meeting current VBBL requirements, modelled under the methodologies and assumptions outlined in v2.0 of the EMGs and compare the modelled results with the major recommendations from the above list. Provide comparison of how TEDI, TEUI, CEDI, GHGI and overheating hours are affected by the recommended changes. In responding to this RFP, the proponent should specify the methodology for this step.
 - b) Provide a brief report on how various components of building energy usage may be affected by the changes listed above, along with the proponent's list of recommended changes. The report should also provide brief commentary on any significant changes to energy modelling or design workflow related to the recommended changes.
- 15) Engagement with stakeholders
Organize and facilitate a minimum of 2 (two) virtual workshops to share proposed changes to the following groups and gather feedback in June 2023. Create an online survey to collect

⁹<https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW7JPMODAJKVYBCLHGRA24FJJPH3/Whole%20Building%20Energy%20Modelling%20Services>

written feedback to a draft version of the EMG changes. The survey should be made live in time for the workshops and remain open for 4 weeks.

- a) Workshop #1 with stakeholders to include relevant code compliance professionals from BC's Climate Action Secretariat, Building & Safety Standards Branch, BC Housing, BC Hydro, local municipalities etc., with approximate 10-20 individuals
- b) Workshop #2 with local energy modelling professionals (approximately 25-50 individuals)

Deliverables

The project will result in the following deliverables to the City:

- 1) Meetings with City staff as appropriate, including at a minimum:
 - a. Kick-off meeting to review scope and clarify assumptions;
 - b. Regular progress updates, bi-weekly as needed;
 - c. Presentation and review of preliminary findings with core City staff;
 - d. Organize and facilitate two workshops to share proposed changes to industry stakeholders, and to gather input on practical, technical or software issues and opportunities
 - e. Online survey to gather feedback from draft EMG changes
- 2) A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved;
- 3) A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI; and
- 4) A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.

APPENDIX 1
PROPOSAL FORM

RFP No. PS20230002, CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE (the
"RFP")

Proponent's Name: _____
"Proponent"

Address: _____

Jurisdiction of Legal Organization: _____

Date of Legal Organization: _____

Key Contact Person: _____

Telephone: _____

E-mail: _____

The Proponent, having carefully examined and read the RFP, including all amendments thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 2 to the RFP.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Signature of Authorized Signatory for the Proponent

Date

Name and Title

Executive Summary

Provide a brief executive summary of your Proposal.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

References	
Client Name # 1	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	
Client Name # 2	
Address (City and Country)	
Contact Name	
Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	
Client Name # 3	
Address (City and Country)	
Contact Name	

Title of Contact	
Telephone No.	
E-mail Address	
Length of Relationship	
Type of Goods and/or Services provided to this Client	

<p>Subcontractors</p> <p>List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).</p>

<p>Declaration of Supplier Code of Conduct</p> <p>The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") <https://policy.vancouver.ca/AF01401P1.pdf>, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.</p> <p>As an authorized signatory of _____ (<i>vendor name</i>), I declare that I have reviewed the SCC and to the best of my knowledge, _____ (<i>vendor name</i>) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of _____ (<i>vendor name</i>).</p> <p>Signature: _____</p> <p>Name and Title: _____</p> <p>Exceptions to Declaration:</p>

Conflicts, Collusion, Lobbying

See Article 9 of Appendix 2 for instructions.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:		
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			\$

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
		\$
		\$
		\$
		\$
		\$

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

<p>Majority owned/controlled/ by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Women <input type="checkbox"/> Indigenous Peoples <input type="checkbox"/> Non-Profit/Charity (Social Enterprise) <input type="checkbox"/> Coop <input type="checkbox"/> Community Contribution Corporation (3C/CCC) <input type="checkbox"/> Ethno-cultural Persons <input type="checkbox"/> People with Disabilities <input type="checkbox"/> LGBTQ+ <input type="checkbox"/> Other: please indicate 	<p>Workforce Diversity:</p> <ul style="list-style-type: none"> % Women % Indigenous Peoples % Ethno-cultural People % People with Disabilities % LGBTQ+ % Other: please indicate 	<p>Social / Environmental Certifications</p> <ul style="list-style-type: none"> <input type="checkbox"/> BCorp <input type="checkbox"/> BuySocial <input type="checkbox"/> Supplier Diversity Certification <input type="checkbox"/> Fairtrade <input type="checkbox"/> Green Business Certification (ie. LEED, ClimateSmart) <input type="checkbox"/> Other: please indicate
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**APPENDIX 2
LEGAL TERMS AND CONDITIONS OF RFP**

1. APPLICATION OF THESE LEGAL TERMS AND CONDITIONS

These legal terms and conditions set out the City's and the Proponent's legal rights and obligations only with respect to the RFP proposal process and any evaluation, selection, negotiation or other related process. In no event will the legal terms and conditions of this Appendix 2 apply to, or have the effect of supplementing, any Contract formed between the City and the Proponent, or otherwise apply as between the Proponent and the City following the signing of any such Contract.

2. DEFINITIONS

In this Appendix 2, the following terms have the following meanings:

- (a) "City" means the City of Vancouver, a municipal corporation continued pursuant to the Vancouver Charter.
- (b) "Contract" means a legal agreement, if any, entered into between the City and the Proponent following and as a result of the Proponent's selection by the City in the City's RFP process.
- (c) "Losses" means, in respect of any matter, all direct or indirect, as well as consequential: claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement whether from a third person or otherwise).
- (d) "Proponent" means the legal entity which has signed the Proposal Form, and "proponent" means any proponent responding to the RFP, excluding or including the Proponent, as the context requires.
- (e) "Proposal" means the package of documents consisting of the Proposal Form (including this Appendix 2), the Proponent's proposal submitted under cover of the Proposal Form, and all schedules, appendices and accompanying documents, and "proposal" means any proposal submitted by any proponent, excluding or including the Proponent, as the context requires.
- (f) "Proposal Form" means Appendix 2 of the RFP, as completed and executed by the Proponent.
- (g) "RFP" means the document issued by the City as Request for Proposals No. PS20230002, as amended from time to time and including all addenda.

3. NO LEGAL OBLIGATION ASSUMED BY THE CITY

Despite any other term of the RFP or the Proposal Form, including this Appendix 2 (except only Sections 7, 8.2 and 10 of this Appendix 2, in each case to the extent applicable), the City assumes no legal duty or obligation to the Proponent or to any proposed subcontractor in respect of the RFP, its subject matter or the Proposal unless and until the City enters into a Contract, which the City may decline to do in the City's sole discretion.

4. NO DUTY OF CARE OR FAIRNESS TO THE PROPONENT

The City is a public body required by law to act in the public interest. In no event, however, does the City owe *to the Proponent or to any of the Proponent's proposed subcontractors* (as opposed to the public) any contract or tort law duty of care, fairness, impartiality or procedural fairness in the RFP process, or any contract or tort law duty to preserve the integrity of the RFP process. The Proponent hereby waives and releases the City from any and all such duties and expressly assumes the risk of all Losses arising from participating in the RFP process on this basis.

5. EVALUATION OF PROPOSALS

5.1 Compliance / Non-Compliance

Any proposal which contains an error, omission or misstatement, which contains qualifying conditions, which does not fully address all of the requirements or expectations of the RFP, or which otherwise fails to conform to the RFP may or may not be rejected by the City at the City's sole discretion. The City may also invite a proponent to adjust its proposal to remedy any such problem, without providing the other proponents an opportunity to amend their proposals.

5.2 Reservation of Complete Control over Process

The City reserves the right to retain complete control over the RFP and proposal processes at all times. Accordingly, the City is not legally obligated to review, consider or evaluate the proposals, or any particular proposal, and need not necessarily review, consider or evaluate the proposals, or any particular proposal, in accordance with the procedures set out in the RFP, and the City reserves the right to continue, interrupt, cease or modify its review, evaluation and negotiation processes in respect of any or all proposals at any time without further explanation or notification to any proponents.

5.3 Discussions/Negotiations

The City may, at any time prior to signing a Contract, discuss or negotiate changes to the scope of the RFP, any proposal or any proposed agreement with any one or more of the proponents without having any duty or obligation to advise the Proponent or to allow the Proponent to vary its Proposal as a result of such discussions or negotiations with other proponents or changes to the RFP or such proposals or proposed agreements, and, without limiting the general scope of Section 6 of this Appendix 2, the City will have no liability to the Proponent as a result of such discussions, negotiations or changes.

5.4 Acceptance or Rejection of Proposals

The City has in its sole discretion, the unfettered right to: accept any proposal; reject any proposal; reject all proposals; accept a proposal which is not the lowest-price proposal; accept a proposal that deviates from the requirements of the RFP or the conditions specified in the RFP; reject a proposal even if it is the only proposal received by the City; accept all or any part of a proposal; enter into agreements respecting the subject matter of the RFP with one or more proponents; or enter into one or more agreements respecting the subject matter of the RFP with any other person at any time.

6. PROTECTION OF CITY AGAINST LAWSUITS

6.1 Release by the Proponent

Except only and to the extent that the City is in breach of Section 8.2 of this Appendix 2, the Proponent now releases the City, its officials, its agents and its employees from all liability for any Losses incurred in connection with the RFP or the Proposal, including any Losses in connection with:

- (a) any alleged (or judicially determined) breach by the City or its officials, agents or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process,
- (c) the Proponent preparing and submitting the Proposal;
- (d) the City accepting or rejecting the Proposal or any other submission; or

- (e) the manner in which the City: reviews, considers, evaluates or negotiates any proposal; addresses or fails to address any proposal or proposals; resolves to enter into a Contract or not enter into a Contract or any similar agreement; or the identity of the proponent(s) or other persons, if any, with whom the City enters any agreement respecting the subject matter of the RFP.

6.2 Indemnity by the Proponent

Except only and to the extent that the City breaches Section 8.2 of this Appendix 2, the Proponent indemnifies and will protect, save and hold harmless the City, its officials, its agents and its employees from and against all Losses, in respect of any claim or threatened claim by the Proponent or any of its proposed subcontractors or agents alleging or pleading:

- (a) any alleged (or judicially determined) breach by the City or its officials or employees of the RFP (it being agreed that, to the best of the parties' knowledge, the City has no obligation or duty under the RFP which it could breach (other than wholly unanticipated obligations or duties merely alleged or actually imposed judicially));
- (b) any unintentional tort of the City or its officials or employees occurring in the course of conducting the RFP process, or
- (c) liability on any other basis related to the RFP or the proposal process.

6.3 Limitation of City Liability

In the event that, with respect to anything relating to the RFP or this proposal process (except only and to the extent that the City breaches Section 8.2 of this Appendix 2), the City or its officials, agents or employees are found to have breached (including fundamentally breached) any duty or obligation of any kind to the Proponent or its subcontractors or agents whether at law or in equity or in contract or in tort, or are found liable to the Proponent or its subcontractors or agents on any basis or legal principle of any kind, the City's liability is limited to a maximum of \$100, despite any other term or agreement to the contrary.

7. DISPUTE RESOLUTION

Any dispute relating in any manner to the RFP or the proposal process (except to the extent that the City breaches this Section 7 or Section 8.2 of this Appendix 2, and also excepting any disputes arising between the City and the Proponent under a Contract (or a similar contract between the City and a proponent other than the Proponent)) will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia), amended as follows:

- (a) The arbitrator will be selected by the City's Director of Legal Services;
- (b) Section 6 of this Appendix 2 will: (i) bind the City, the Proponent and the arbitrator; and (ii) survive any and all awards made by the arbitrator; and
- (c) The Proponent will bear all costs of the arbitration.

8. PROTECTION AND OWNERSHIP OF INFORMATION

8.1 RFP and Proposal Documents City's Property

- (a) All RFP-related documents provided to the Proponent by the City remain the property of the City and must be returned to the City, or destroyed, upon request by the City.

- (b) The documentation containing the Proposal, once submitted to the City, becomes the property of the City, and the City is under no obligation to return the Proposal to the Proponent.

8.2 Proponent's Submission Confidential

Subject to the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia), other applicable legal requirements, and the City's right to publicly disclose information about or from the Proposal, including without limitation names and prices, in the course of publicly reporting to the Vancouver City Council about the RFP, the City will treat the Proposal (and the City's evaluation of it), in confidence in substantially the same manner as it treats its own confidential material and information.

8.3 All City Information Confidential

- (a) The Proponent will not divulge or disclose to any third parties any non-public documents or information concerning the affairs of the City which have been or are in the future provided or communicated to the Proponent at any time (whether before, during or after the RFP process). Furthermore, the Proponent agrees that it has not and must not use or exploit any such non-public documents or information in any manner, including in submitting its Proposal.
- (b) The Proponent now irrevocably waives all rights it may have by statute, at law or in equity, to obtain any records produced or kept by the City in evaluating its Proposal (and any other submissions) and now agrees that under no circumstances will it make any application to the City or any court for disclosure of any records pertaining to the receipt, evaluation or selection of its Proposal (or any other submissions) including, without limitation, records relating only to the Proponent.

9. NO CONFLICT OF INTEREST / NO COLLUSION / NO LOBBYING

9.1 Declaration as to no Conflict of Interest in RFP Process

- (a) The Proponent confirms and warrants that there is no officer, director, shareholder, partner, employee or contractor of the Proponent or of any of its proposed subcontractors, or any other person related to the Proponent's or any proposed subcontractor's organization (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is: (i) an official or employee of the City; or (ii) related to or has any business or family relationship with an elected official or employee of the City, in each case, such that there could be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of the Proposal by the City, and, in each case, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.
- (b) The Proponent confirms and warrants that there is no person having an interest (as defined above) who is a former official, former employee or former contractor of the City and who has non-public information relevant to the RFP obtained during his or her employment or engagement by the City, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.

9.2 Declaration as to No Conflict of Interest Respecting Proposed Supply

The Proponent confirms and warrants that neither the Proponent nor any of its proposed subcontractors is currently engaged in supplying (or is proposing to supply) goods or services to a third party such that entering into an agreement with the City in relation to the subject matter of the RFP would create a conflict of interest or the appearance of a conflict of interest between the Proponent's duties to the City and the Proponent's or its subcontractors' duties to such third party, except as set out, in all material detail, in the section titled "Conflicts; Collusion; Lobbying" in the Proposal Form.

9.3 Declaration as to No Collusion

The Proponent confirms and warrants that:

- (a) the Proponent is not competing within the RFP process with any entity with which it is legally or financially associated or affiliated, and
- (b) the Proponent is not cooperating in any manner in relation to the RFP with any other proponent responding to the RFP,

in each case, except as set out, in all material detail, in the section titled “Conflicts, Collusion, Lobbying” in the Proposal Form.

9.4 Declaration as to Lobbying

The Proponent confirms and warrants that:

- (a) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors is registered as a lobbyist under any lobbyist legislation in any jurisdiction in Canada or in the United States of America; and
- (b) neither it nor any officer, director, shareholder, partner, employee or agent of the Proponent or any of its proposed subcontractors has engaged in any form of political or other lobbying whatsoever with respect to the RFP or sought, other than through the submission of the Proposal, to influence the outcome of the RFP process,

in each case as set out, in all material detail, in the section titled “Conflicts, Collusion, Lobbying” in the Proposal Form.

10. GENERAL

- (a) All of the terms of this Appendix 2 to this Proposal Form which by their nature require performance or fulfillment following the conclusion of the proposal process will survive the conclusion of such process and will remain legally enforceable by and against the Proponent and the City.
- (b) The legal invalidity or unenforceability of any provision of this Appendix 2 will not affect the validity or enforceability of any other provision of this Appendix 2, which will remain in full force and effect.
- (c) The Proponent now assumes and agrees to bear all costs and expenses incurred by the Proponent in preparing its Proposal and participating in the RFP process.

APPENDIX 3
SAMPLE FORM OF AGREEMENT



PS20230002 - SERVICES CONTRACT

City of Vancouver (the “City”)

AND: <[redacted] legal name of other party> (the “Contractor”)

having the following address:

453 West 12th Avenue

Vancouver, British Columbia, Canada

V5Y 1V4

Tel Number: [phone number of project manager]

Email: [email address of the project manager]

having the following address:

[address of other party]

Tel Number: [phone number]

Email: [email address]

Name of City Project Manager: []

This contract for services is comprised of this cover page, the following parts A, B, C, D and E, the attached Services Contract Terms and Conditions, and any other attachments, schedules, appendices or annexes expressly referred to in the aforementioned parts A, B, C, D and E, and the signature blocks following Part F below. By signing below, the City and the Contractor hereby agree to be bound by the terms of this contract.

PART A - SERVICES:

<  *Insert description.* >

[Note: Describe in detail what the services are, where they will be performed, who will be performing them, etc. Whenever necessary, supplement with a Schedule A further describing the services, as well as any delivery/performance schedule, milestones, etc.]

The Services are further described in Schedule A. <  **Delete if not included.** >

Start date for the Services: <  > (the "Start Date")

The Contractor agrees to complete the Services by: <  >

PART B - FEES AND EXPENSES:

Billing Date(s): See Section 20 of the Services Contract Terms and Conditions

Fees: <description>

[Insert description of fees and state which taxes will be charged in addition to the fees and/or which taxes are included in the fees.]

Definitions:

“GST” means the tax payable and imposed pursuant to Part IX of the Excise Tax Act (Canada), as amended or replaced from time to time.

Expenses: [Tick applicable ONE; tick one.]

- Reimbursable by the City but only in accordance with this Contract (see the Services Contract Terms and Conditions); or
- Not reimbursable (included in fees)

“PST” means the provincial sales tax payable and imposed pursuant to the Provincial Sales Tax Act (British Columbia), as amended or replaced from time to time.

Maximum Amount of Fees and Expenses (the “Maximum Amount”):

<description>

[Insert description of cap and state which taxes will be charged on top of the cap and/or which taxes are to be included in the cap.]

The fees and expenses are further described in Schedule B.

[Delete if not included.]

PART C: APPROVED SUBCONTRACTORS

<description> [Provide names or write “None”.]

PART D: INSURANCE

Without limiting any of its obligations or liabilities under this Services Contract, the Contractor will obtain and continuously carry and will cause its subcontractors to obtain and continuously carry during the term of the Services Contract at its own expense and cost, the following insurance coverages with minimum limits of not less than those shown in the respective items set out below:

- (a) Commercial general liability insurance with a limit of not less than \$5,000,000 per occurrence and a deductible of not more than \$5,000 or other such amounts as the City may approve from time to time, protecting the Contractor and the Contractor's personnel against all claims for bodily injury including death, personal injury, advertising liability, products liability, sudden & accidental pollution, completed operations, or property damage or loss, arising out of the operations of the Contractor or the actions of the Contractor or the Contractor's personnel. The policy will carry blanket contractual liability coverage, include a cross-liability clause in favour of the City, and will name the City and the City's officials, officers, employees and agents as additional insureds;
- (b) All-risks property insurance covering the Contractor's property of every description containing a provision in which the insurer waives all rights which it may acquire by payment of a claim to recover the paid amount from the City or its officials, officers, employees or agents; and
- (c) Automobile insurance covering all vehicles owned, leased, rented or operated by the Contractor in connection with this Services Contract, including third party legal liability insurance in an amount not less than \$5,000,000 per occurrence, or such other amount as the City may approve from time to time.

The Contractor and each of its subcontractors will provide at its own cost other lines of insurance coverages, endorsements, or increased limits of insurance as deemed necessary by the City and as a reasonable and prudent contractor would require to protect their operations or performance of services.

All insurance policies required by this Services Contract shall be with insurers duly authorized to carry on business in the Province of British Columbia, in a form and in amounts satisfactory from time to time and acceptable to the City's Director of Risk Management.

The required insurance shall not be cancelled or endorsed to reduce the limits of liability without thirty (30) days' written notice by registered mail to the City. Should the policy be endorsed to restrict coverage midterm, written notice of such restriction will be provided by registered mail to the City no later than the effective date of change; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply. Notice must identify the contract title, number, policy holder, and scope of work.

The Contractor's insurance policy (policies) shall be primary with respect to all claims arising out of the operations of the Contractor. Any insurance or self-insurance maintained by or on behalf of the City or its officials, officers, employees, or agents will be excess of the Contractor's insurance and will not contribute to it.

Neither the providing of insurance by the Contractor in accordance with this Agreement, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing will be held to relieve the Contractor from any other provisions of the Services Contract with respect to liability of the Contractor or otherwise.

Prior to the Start Date, the Contractor will provide the City with evidence of all required insurance in the form of a certificate of insurance satisfactory to the City. The certificate of insurance will identify the contract title, number, policyholder, and scope of work. The Contractor will provide proof of insurance, in the form of a certificate of insurance or certified copies of all insurance policies to the Manager, Contracts and Administration at any time immediately upon request.

The Contractor will provide in its agreements with its subcontractors clauses in the same form as in this Part D. Upon request, the Contractor will deposit with the City detailed certificates of insurance for the policies it has obtained from its subcontractors and a copy of the applicable insurance clauses from its sub-contract agreements.

PART E: ADDITIONAL TERMS

<☒> [Describe or write "None".]

The following are integral parts of this Services Contract:

- <☒name of first schedule>;
- <☒name of second schedule>; and
- <☒name of third schedule>.

[Delete if no attachments.]

The parties hereto have duly executed this Contract as of the <☒> day of <☒month>, 20<☒year>.

SIGNED AND DELIVERED on behalf of the City by its authorized signatory(ies):

SIGNED AND DELIVERED on behalf of the Contractor by its authorized signatory(ies):

Per: _____

[Name and Title]

Per: _____

[Name and Title]

SERVICES CONTRACT TERMS AND CONDITIONS

A. CONTRACTOR'S OBLIGATIONS

1. **Performance of Services.** The Contractor agrees to provide the City with the services described in PART A (and in any schedule referred to therein), including, without limitation, and to the extent not expressly described in PART A (or in any such schedule), all services necessary or incidental to the completion of the services contemplated and described therein (the "Services"), all in accordance with the Services Contract (this "Contract"). The Contractor must provide the Services commencing on the Start Date described in PART A and in accordance with the delivery schedule (if any) specified in PART A (or in any schedule referred to therein), regardless of the date of execution or delivery of this Contract. The Contractor must comply with the City's instructions in performing the Services, but unless otherwise specified herein, the Contractor shall at all times retain control over the manner in which those instructions are carried out.
2. **Provision of Service Inputs.** Unless otherwise specified herein, the Contractor must supply and pay for all labour, materials, permits and approvals (including from any relevant government authority) necessary or advisable to provide the Services.
3. **Standard of Care and Applicable Laws.** The Contractor must perform the Services to the standard of care, skill, and diligence prescribed herein, or where not prescribed herein, to the standard customarily maintained by persons providing, on a commercial basis, services similar to the Services, and in accordance with all statutes, regulations, by-laws, codes, rules, notices, orders, directives, standards and requirements of every competent federal, provincial, regional, municipal and other statutory authority applicable to the Contractor and its personnel and the Services.
4. **Warranty.** Without limitation to any additional warranties provided by the Contractor, whether indicated on the face of this contract or otherwise provided, the Contractor warrants that: (a) all goods, provided by the Contractor in connection with its performance of the Services ("Goods"), shall be of merchantable quality and free from defects in workmanship and materials; (b) all Goods shall strictly conform to applicable samples, specifications and drawings; (c) all Goods and Services shall be fit for the purpose intended by the City; (d) all Goods shall be free and clear of all liens, charges and encumbrances; (e) the Goods and Services shall comply with the standards set forth by applicable federal, provincial, municipal and industry regulatory agencies; (f) the shipping and handling of any hazardous material will be made in accordance with all applicable laws and regulations; and (g) the Goods and Services shall comply with all applicable environmental protection laws and regulations.

Unless a longer warranty period is specified on the face of this Contract or is otherwise provided, the foregoing warranty shall be valid for one year from the date of acceptance of the Goods and Services by the City. If at any time prior to the expiration of any applicable warranty period, any weakness, deficiency, failure, breakdown or deterioration in workmanship or material should appear or be discovered in the Goods and Services furnished by the Contractor, or if the Goods and Services do not conform to the terms and conditions of this Contract, the City may at its option (a) require the Contractor to promptly replace, redesign or correct the defective and non-conforming Goods and Services at no expense to the City, or (b) the City may replace or correct the defective Goods and Services and charge the Contractor with all expenses incurred by the City. The Contractor agrees to indemnify and save harmless the City, its officials, officers, employees, assigns, agents, clients and the public from any liability, loss, cost and expense arising either directly or indirectly, from breach of any warranty given by the Contractor hereunder.

5. **Contractor Personnel.** The Contractor must ensure that all persons it employs or retains to perform the Services are competent to perform them and are properly trained, instructed, and supervised, and that all such persons comply with the provisions of this Contract.
6. **Reporting.** The Contractor must, upon the City's request, fully report to the City on all work it does or has done in connection with providing the Services.
7. **Deliverables.** As a result of or as part of providing the Services, the Contractor may receive, create, produce, acquire or collect items including, without limitation, products, goods, equipment, supplies, models, prototypes and other materials; information and data; reports, drawings, plans, designs, depictions, specifications and other documentation (collectively, "Deliverables"). Deliverables do not include items that are: not required to be produced by the Contractor or supplied to the City as part of or together with the Services unless the City pays for such items; or specified in this Contract as being excluded from the Deliverables category; or items which pre-existed the effective date of this Agreement that are owned by a third party or that are used by the Contractor as part of the services provided to any of its other customers. All Deliverables will be owned solely by the City unless otherwise expressly provided herein and the City will have the complete right to use and deal with the Deliverables for its own benefit in any way it sees fit without limitation. The Contractor waives, in favour of the City, all moral rights in the Deliverables, transfers to the City, free of all liens and encumbrances, ownership of each Deliverable, and assigns all of its world-wide present and future rights, title and interest in and to each Deliverable, including copyright, effective as of the date of creation or acquisition of such Deliverable. The Contractor will permit the City to inspect and copy all Deliverables.
8. **Confidentiality.** The Contractor acknowledges that, in performing the Services required under this Contract, it may acquire information about matters which are confidential to the City, which information is the exclusive world-wide property of the City or its suppliers or citizens, as the case may be. The Contractor undertakes to treat as confidential all Deliverables and all information received by reason of its position as Contractor and agrees not to disclose the same to any third party either during or after the performance of the Services under this Contract, without the City's express prior written consent.
9. **Insurance.** The Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, the insurance coverage (if any) described in PART D (including the type and form of policy, the coverage amounts, and the amount of deductible). If no insurance coverage is specified in PART D, the Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, such insurance as would be obtained by a prudent consultant or contractor providing services similar to the Services. The Contractor must provide written proof of such insurance coverage upon the written request of the City.
10. **WorkSafeBC.** The Contractor agrees that it will procure and carry and pay for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or services performed in fulfilling this Contract have been paid in full. The Contractor will provide the City with the Contractor's and each subcontractor's WorkSafeBC registration number and clearance letters from WorkSafeBC confirming that the contractor and each subcontractor is in good standing with WorkSafeBC prior to the City having any obligation to pay monies under this Agreement.

Whenever the Contractor is required or permitted to perform any Services on any City sites, the Contractor is now appointed and now accepts appointment as the "prime contractor" in connection with such Services and will fulfil its obligations as Prime Contractor in accordance with the Workers Compensation Act (British Columbia), and the regulations thereunder, and the Contractor shall comply with all applicable health and safety laws.

11. **City Business Licence.** The Contractor will maintain a valid City of Vancouver business licence in good standing throughout the duration of this Contract.
12. **Resolution of Disputes.** This Contract will be governed by the laws of British Columbia and the parties now irrevocably attorn to the exclusive jurisdiction of, and agree to submit all disputes to, the courts of British Columbia for resolution. The Contractor shall continue performance of its obligations under this Contract notwithstanding the existence of a dispute.
13. **Independent Contractor.** This Contract is a contract for services and neither the Contractor nor the Contractor's personnel or permitted subcontractors, are, or deemed to be, partners, appointees, employees or agents of the City. The Contractor will not represent to anyone that the Contractor has any authority to bind the City or that the Contractor is an employee or agent of the City.
14. **No Assignment or Subcontracting.** The Contractor will not assign or subcontract (other than to persons listed in PART C (or a schedule referred to therein)), either directly or indirectly (including, without limitation, by way of any transfer of control of the shares or ownership interests in the Contractor), this Contract or any right or obligation of the Contractor under this Contract, without the prior written consent of the City, which consent may be arbitrarily withheld. No assignment or subcontract, whether consented to or not, relieves the Contractor from any obligations under this Contract. The Contractor must ensure that any assignee or subcontractor fully complies with this Contract in performing the Services and nothing in this Contract creates any contractual relationship between a subcontractor and the City.
15. **Conflict of Interest.** The Contractor must not provide any services to any person in circumstances which, in the City's reasonable opinion, could give rise to a conflict of interest between its duties to that person and its duties to the City under this Contract.

16. Release and Indemnification

a. Release

The Contractor now releases the City and the City's personnel from all losses including those caused by personal injury, death, property damage or loss, and economic loss, arising out of, suffered or experienced by the Contractor or the Contractor's personnel in connection with their performance of the Services.

b. Acceptance "As Is"

In undertaking the Services, the Contractor acknowledges that it has inspected the City's site(s), agrees to accept the site(s) "as-is" and undertakes to take all precautions necessary to ensure the safety of all the Contractor's personnel.

c. Indemnity

Despite any insurance which may be placed by the City, the Contractor now agrees to indemnify and save harmless the City and its officials, officers, employees, agents, successors, assigns and authorized representatives (in each case, an "Indemnified Party") from and against all costs, losses, claims, damages, actions and causes of action ("Claims") that an Indemnified Party may sustain, incur, suffer or be put to at any time either before or after the completion of the Services or sooner cancellation of this Contract, that arise out of any act or failure to act of the Contractor or the Contractor's personnel, permitted assignees or subcontractors in connection with the performance of this Contract, including any Claims that arise out of or are in any way related to unpaid WorkSafeBC assessments or the failure to observe safety rules, regulations and practices of WorkSafeBC, excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or negligent acts of an Indemnified Party.

d. Separate from Other Remedies and Rights

Nothing in this Contract (including this indemnity) will affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

e. Survival of Release/Indemnity

This Section 16 will survive the expiry or sooner termination of this Contract.

B. CHANGES TO SERVICES

17. **Changes.** The City may, at any time and from time to time and without invalidating this Contract, require a change to the Services and/or to the schedule for the delivery of the Services. Should the Contractor consider that any such request or instruction constitutes a change warranting amendment of the Maximum Amount, another price or the schedule for the Services set forth in the Contract, the Contractor must advise the City in writing prior to acting on any such request or instruction, and in any event within five (5) City of Vancouver business days of such request or instruction. In that case, the Maximum Amount, other price and/or schedule will be adjusted, if/as agreed to by both parties in writing, and failing agreement, if/as the City may determine, acting reasonably. Failing any such adjustment, the Services provided pursuant to the request or instruction will be deemed to be included within the prices specified herein, and to be subject to the schedule prescribed herein.

18. **Changes to Key Personnel.** The City may from time to time request reasonable changes to the key personnel of the Contractor engaged in performing the Services, and the Contractor shall comply with any such request. The Contractor shall not change any of such key personnel without the prior written approval of the City, which approval will not be unreasonably withheld.

C. PAYMENT

19. **Payment of Fees and Expenses.** In consideration for the satisfactory performance of the Services, The City will pay to the Contractor the fees specified in PART B (as supplemented by any schedule referred to therein), subject to this Section C. In addition, if the parties have specified in PART B that the Contractor's expenses are reimbursable in accordance with this Contract, the City will reimburse the Contractor for all expenses that: (i) are approved by the City in writing (in accordance with the City's existing policies and procedures for expense reimbursement) prior to their being incurred by the Contractor; (ii) are necessary, in the opinion of the City, to perform the Services; and (iii) are supported by proper receipts or other documentation satisfactory to the City (acting reasonably), provided always that the City reserves the right to make arrangements through its service providers for any flights and/or accommodations required by the Contractor in connection with its performance of the Services. If a "Maximum Amount" is specified in Part B, then the City is not, and shall not be, obliged to pay to the Contractor more than such Maximum Amount on account of aggregate fees (and, if applicable, expenses). Payment terms are "net 30 days" from the date of receipt of a valid invoice.

20. **Invoicing.** The Contractor will, by the 25th day of each month, provide to the City's Project Manager (named on the cover page of this Contract) a draft invoice with an attached detailed account of all charges to be claimed by the Contractor for the preceding month. The City's Project Manager shall review the draft, raise any concerns with the Contractor within ten working days and, after settlement of any issues (in the Project Manager's discretion), approve the draft invoice. The Contractor, if so requested, will meet with the City's Project Manager to expedite and settle the draft invoice. The Contractor will submit its final invoice, as per the approved draft invoice, to the City of Vancouver, Attention: Accounts Payable, by email to APInvoice@vancouver.ca. Each invoice must contain:

- Contractor name, address and telephone;
- City purchase order number;
- Name of the City's Project Manager;
- Invoice number and date;
- Details of any applicable taxes; and
- Tax registration number(s).

21. **Builders Lien Act.** If the Services to be performed under this Contract are subject to the holdback requirements set out in the *Builders Lien Act* (British Columbia) (the "Lien Act"), the City will withhold and discharge the required holdback amounts in accordance with the requirements set out in the Lien Act.

22. **Discharge of Liens and Withholding.** The Contractor will, if applicable, make payment and take all other steps which may be necessary so that no lien claims, including lien claims made under the Lien Act, are made in connection with the provision of the Services, and that the compensation payable to the Contractor by the City is not subject to attachment for debt, garnishing process or otherwise. In the event that any lien is filed in connection with the provision of the Services at any court or land title office, the Contractor shall immediately cause such lien to be discharged. The City may withhold from any payment due to the Contractor an amount sufficient to indemnify the City against any lien claim that could arise in connection with the provision of the Services, until such time as the lien has been discharged or other arrangements to satisfy such lien have been made by the Contractor.

23. **Withholding for Non-Residents.** If the Contractor is a non-resident of Canada, the City may withhold from any payment due to the Contractor such amounts as may be required to be withheld pursuant to the applicable provisions of the Canada *Income Tax Act* (the "ITA"). Any amount so withheld shall be remitted to the Receiver General for Canada or otherwise dealt with by the City strictly in accordance with the provisions of the ITA.

24. **Record Keeping.** The Contractor must maintain, and shall cause any subcontractors to maintain, time records and books of account, invoices, receipts, and vouchers of all expenses incurred, in form and content satisfactory to the City. The City or any of its authorized representatives will, for the purposes of audit and examination, have access and be permitted, upon reasonable notice to the Contractor, to inspect such records for review, copy and audit at any time and from time to time while this Contract is in effect and for a period of three years after the expiry or termination of this Contract for any reason.

25. **Currency.** Unless otherwise specified in this Contract, all references to money are to Canadian dollars.

26. **Electronic Funds Transfer.** The City expects to make payments by electronic funds transfer and the Contractor must provide banking information to the City in order to permit this.

D. GENERAL

27. **Time for Performance.** Time is of the essence in this Contract.
28. **Amendments.** No modification of this Contract is effective unless it is in writing and signed by all the parties.
29. **Entire Agreement.** This Contract constitutes the entire agreement between the parties as to performance of the Services, and replaces and supersedes any other agreements, correspondence or other discussions between the parties, whether or not any of the foregoing have been reduced to writing.
30. **Conflict.** If there is a conflict between a provision of a schedule to this Contract and the terms and conditions of this Services Contract, the provision in the relevant schedule is inoperative to the extent of the conflict unless it states that it operates despite a conflicting provision of this Contract.
31. **Severability.** If any provision of this Contract is determined to be void or unenforceable, in whole or in part, it shall not be deemed to affect or impair the enforceability or validity of any other provision of this Contract, and any such void or unenforceable provision may be severed from this Contract without affecting the remainder of the Contract.
32. **Termination.** The City may terminate this Contract:
- a. Upon failure of the Contractor to comply with this Contract, immediately on giving written notice of termination to the Contractor, or
 - b. For any other reason, on giving at least 10 days' written notice of termination to the Contractor.

If the City terminates this Contract under paragraph b. above, the City must pay the Contractor that portion of the fees and expenses described in PART B which equals the portion of the Services that was completed to the City's satisfaction before termination. That payment discharges the City from all liability to the Contractor under this Contract. If the Contractor fails to comply with this Contract, the City may terminate it and pursue other remedies as well.

33. **Binding Effect.** This Contract shall be binding on the Contractor's successors and permitted assigns and shall enure to the benefit of any successors and assigns of the City.
34. **Voluntary Agreement.** The Contractor acknowledges and declares that it has carefully considered and understood the terms of this Contract, that it has either consulted legal counsel or waived such right, and that it is executing this Contract voluntarily.
35. **Further Assurances.** The Contractor agrees that upon any reasonable request of the City, the Contractor will make, do, execute or cause to be made, done or executed all such other acts as may be required to more fully give effect to the terms and conditions hereof.
36. **Headings.** The headings used in the Parts and sections of this Contract are for convenience of reference only, and shall not operate to expand, modify or interpret the language therein.
37. **Counterparts.** This Contract may be executed in one or more counterparts, including by facsimile or other electronic transmission, and each of such counterparts shall be deemed to be taken together to constitute one and the same original document.
38. **Additional Terms:** The additional terms set out in Part E (or in any schedule referred to therein) apply to this Contract. **END OF TERMS AND CONDITIONS OF SERVICES CONTRACT**

[Add schedules.]



PS20230002 - SERVICES CONTRACT

City of Vancouver (the “City”)

having the following address:

453 West 12th Avenue

Vancouver, British Columbia, Canada

V5Y 1V4

Tel Number: 604-871-6833

Email: charling.li@vancouver.ca

Name of City Project Manager: Charling Li

AND: Focal Engineering Inc. (the “Contractor”)

having the following address:

467 John Street

Victoria, British Columbia, Canada

V8T 5H1

Tel Number: 604-842-7893

Email: susan@focaleng.com

Name of Contractor Contact: Susan MacDougall

This contract for services is comprised of this cover page, the following parts A, B, C, D and E, the attached Services Contract Terms and Conditions, and any other attachments, schedules, appendices or annexes expressly referred to in the aforementioned parts A, B, C, D and E, and the signature blocks following Part F below. By signing below, the City and the Contractor hereby agree to be bound by the terms of this contract.

PART A - SERVICES:

To update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025.

The Services are further described in Schedule A.

Start date for the Services: March 1, 2023 (the "Start Date")

The Contractor agrees to complete the Services by: July 10, 2023

PART B - FEES AND EXPENSES:

Billing Date(s): See Section 20 of the Services Contract Terms and Conditions

Fees: \$73,402.00 (Includes PST but excludes GST.)

Expenses: Not reimbursable (included in fees)

Definitions:

Maximum Amount of Fees and Expenses (the "Maximum Amount"): \$73,402.00

"GST" means the tax payable and imposed pursuant to Part IX of the *Excise Tax Act* (Canada), as amended or replaced from time to time.

The fees and expenses are further described in Schedule B.

"PST" means the provincial sales tax payable and imposed pursuant to the Provincial Sales Tax Act (British Columbia), as amended or replaced from time to time.

PART C: APPROVED SUBCONTRACTORS

NONE

PART D: INSURANCE

Without limiting any of its obligations or liabilities under this Services Contract, the Contractor will obtain and continuously carry and will cause its subcontractors to obtain and continuously carry during the term of the Services Contract at its own expense and cost, the following insurance coverages with minimum limits of not less than those shown in the respective items set out below:

- (a) Commercial general liability insurance with a limit of not less than \$2,000,000 per occurrence and a deductible of not more than \$5,000 or other such amounts as the City may approve from time to time, protecting the Contractor and the Contractor's personnel against all claims for bodily injury including death, personal injury, advertising liability, products liability, sudden & accidental pollution, completed operations, or property damage or loss, arising out of the operations of the Contractor or the actions of the Contractor or the Contractor's personnel. The policy will carry blanket contractual liability coverage, include a cross-liability clause in favour of the City, and will name the City and the City's officials, officers, employees and agents as additional insureds;
- (b) All-risks property insurance covering the Contractor's property of every description containing a provision in which the insurer waives all rights which it may acquire by payment of a claim to recover the paid amount from the City or its officials, officers, employees or agents; and

The Contractor and each of its subcontractors will provide at its own cost other lines of insurance coverages, endorsements, or increased limits of insurance as deemed necessary by the City and as a reasonable and prudent contractor would require to protect their operations or performance of services.

All insurance policies required by this Services Contract shall be with insurers duly authorized to carry on business in the Province of British Columbia, in a form and in amounts satisfactory from time to time and acceptable to the City's Director of Risk Management.

The required insurance shall not be cancelled or endorsed to reduce the limits of liability without thirty (30) days' written notice by registered mail to the City. Should the policy be endorsed to restrict coverage midterm, written notice of such restriction will be provided by registered mail to the City no later than the effective date of change; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply. Notice must identify the contract title, number, policy holder, and scope of work.

The Contractor's insurance policy (policies) shall be primary with respect to all claims arising out of the operations of the Contractor. Any insurance or self-insurance maintained by or on behalf of the City or its officials, officers, employees, or agents will be excess of the Contractor's insurance and will not contribute to it.

Neither the providing of insurance by the Contractor in accordance with this Agreement, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing will be held to relieve the Contractor from any other provisions of the Services Contract with respect to liability of the Contractor or otherwise.

Prior to the Start Date, the Contractor will provide the City with evidence of all required insurance in the form of a certificate of insurance satisfactory to the City. The certificate of insurance will identify the contract title, number, policyholder, and scope of work. The Contractor will provide proof of insurance, in the form of a certificate of insurance or certified copies of all insurance policies to the Manager, Contracts and Administration at any time immediately upon request.

The Contractor will provide in its agreements with its subcontractors clauses in the same form as in this Part D. Upon request, the Contractor will deposit with the City detailed certificates of insurance for the policies it has obtained from its subcontractors and a copy of the applicable insurance clauses from its sub-contract agreements.

PART E: ADDITIONAL TERMS{ NONE

The following are integral parts of this Services Contract:

- SCHEDULE A - SERVICES;
- SCHEDULE B - FEES AND EXPENSES and
- SCHEDULE C- CONTRACTOR'S PROPOSAL

The parties hereto have duly executed this Contract as of the 28th day of February, 2023.

SIGNED AND DELIVERED on behalf of the City by its authorized signatory(ies):

Per: s.15(1), s.22(1) _____

Paul Bruce, Manager, Contracts & Administration,
Supply Chain Management

SIGNED AND DELIVERED on behalf of the Contractor by its authorized signatory(ies):

Per: s.15(1), s.22(1) _____

Name and Title

SERVICES CONTRACT TERMS AND CONDITIONS

A. CONTRACTOR'S OBLIGATIONS

1. **Performance of Services.** The Contractor agrees to provide the City with the services described in PART A (and in any schedule referred to therein), including, without limitation, and to the extent not expressly described in PART A (or in any such schedule), all services necessary or incidental to the completion of the services contemplated and described therein (the "Services"), all in accordance with the Services Contract (this "Contract"). The Contractor must provide the Services commencing on the Start Date described in PART A and in accordance with the delivery schedule (if any) specified in PART A (or in any schedule referred to therein), regardless of the date of execution or delivery of this Contract. The Contractor must comply with the City's instructions in performing the Services, but unless otherwise specified herein, the Contractor shall at all times retain control over the manner in which those instructions are carried out.
2. **Provision of Service Inputs.** Unless otherwise specified herein, the Contractor must supply and pay for all labour, materials, permits and approvals (including from any relevant government authority) necessary or advisable to provide the Services.
3. **Standard of Care and Applicable Laws.** The Contractor must perform the Services to the standard of care, skill, and diligence prescribed herein, or where not prescribed herein, to the standard customarily maintained by persons providing, on a commercial basis, services similar to the Services, and in accordance with all statutes, regulations, by-laws, codes, rules, notices, orders, directives, standards and requirements of every competent federal, provincial, regional, municipal and other statutory authority applicable to the Contractor and its personnel and the Services.
4. **Warranty.** Without limitation to any additional warranties provided by the Contractor, whether indicated on the face of this contract or otherwise provided, the Contractor warrants that: (a) all goods, provided by the Contractor in connection with its performance of the Services ("Goods"), shall be of merchantable quality and free from defects in workmanship and materials; (b) all Goods shall strictly conform to applicable samples, specifications and drawings; (c) all Goods and Services shall be fit for the purpose intended by the City; (d) all Goods shall be free and clear of all liens, charges and encumbrances; (e) the Goods and Services shall comply with the standards set forth by applicable federal, provincial, municipal and industry regulatory agencies; (f) the shipping and handling of any hazardous material will be made in accordance with all applicable laws and regulations; and (g) the Goods and Services shall comply with all applicable environmental protection laws and regulations.

Unless a longer warranty period is specified on the face of this Contract or is otherwise provided, the foregoing warranty shall be valid for one year from the date of acceptance of the Goods and Services by the City. If at any time prior to the expiration of any applicable warranty period, any weakness, deficiency, failure, breakdown or deterioration in workmanship or material should appear or be discovered in the Goods and Services furnished by the Contractor, or if the Goods and Services do not conform to the terms and conditions of this Contract, the City may at its option (a) require the Contractor to promptly replace, redesign or correct the defective and non-conforming Goods and Services at no expense to the City, or (b) the City may replace or correct the defective Goods and Services and charge the Contractor with all expenses incurred by the City. The Contractor agrees to indemnify and save harmless the City, its officials, officers, employees, assigns, agents, clients and the public from any liability, loss, cost and expense arising either directly or indirectly, from breach of any warranty given by the Contractor hereunder.

5. **Contractor Personnel.** The Contractor must ensure that all persons it employs or retains to perform the Services are competent to perform them and are properly trained, instructed, and supervised, and that all such persons comply with the provisions of this Contract.
6. **Reporting.** The Contractor must, upon the City's request, fully report to the City on all work it does or has done in connection with providing the Services.
7. **Deliverables.** As a result of or as part of providing the Services, the Contractor may receive, create, produce, acquire or collect items including, without limitation, products, goods, equipment, supplies, models, prototypes and other materials; information and data; reports, drawings, plans, designs, depictions, specifications and other documentation (collectively, "Deliverables"). Deliverables do not include items that are: not required to be produced by the Contractor or supplied to the City as part of or together with the Services unless the City pays for such items; or specified in this Contract as being excluded from the Deliverables category; or items which pre-existed the effective date of this Agreement that are owned by a third party or that are used by the Contractor as part of the services provided to any of its other customers. All Deliverables will be owned solely by the City unless otherwise expressly provided herein and the City will have the complete right to use and deal with the Deliverables for its own benefit in any way it sees fit without limitation. The Contractor waives, in favour of the City, all moral rights in the Deliverables, transfers to the City, free of all liens and encumbrances, ownership of each Deliverable, and assigns all of its world-wide present and future rights, title and interest in and to each Deliverable, including copyright, effective as of the date of creation or acquisition of such Deliverable. The Contractor will permit the City to inspect and copy all Deliverables.
8. **Confidentiality.** The Contractor acknowledges that, in performing the Services required under this Contract, it may acquire information about matters which are confidential to the City, which information is the exclusive world-wide property of the City or its suppliers or citizens, as the case may be. The Contractor undertakes to treat as confidential all Deliverables and all information received by reason of its position as Contractor and agrees not to disclose the same to any third party either during or after the performance of the Services under this Contract, without the City's express prior written consent.
9. **Insurance.** The Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, the insurance coverage (if any) described in PART D (including the type and form of policy, the coverage amounts, and the amount of deductible). If no insurance coverage is specified in PART D, the Contractor must provide, maintain and pay for, and cause all subcontractors to provide, maintain and pay for, such insurance as would be obtained by a prudent consultant or contractor providing services similar to the Services. The Contractor must provide written proof of such insurance coverage upon the written request of the City.
10. **WorkSafeBC.** The Contractor agrees that it will procure and carry and pay for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the City has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or services performed in fulfilling this Contract have been paid in full. The Contractor will provide the City with the Contractor's and each subcontractor's WorkSafeBC registration number and clearance letters from WorkSafeBC confirming that the contractor and each subcontractor is in good standing with WorkSafeBC prior to the City having any obligation to pay monies under this Agreement.

Whenever the Contractor is required or permitted to perform any Services on any City sites, the Contractor is now appointed and now accepts appointment as the "prime contractor" in connection with such Services and will fulfil its obligations as Prime Contractor in accordance with the Workers Compensation Act (British Columbia), and the regulations thereunder, and the Contractor shall comply with all applicable health and safety laws.

11. **City Business Licence.** The Contractor will maintain a valid City of Vancouver business licence in good standing throughout the duration of this Contract.
12. **Resolution of Disputes.** This Contract will be governed by the laws of British Columbia and the parties now irrevocably attorn to the exclusive jurisdiction of, and agree to submit all disputes to, the courts of British Columbia for resolution. The Contractor shall continue performance of its obligations under this Contract notwithstanding the existence of a dispute.
13. **Independent Contractor.** This Contract is a contract for services and neither the Contractor nor the Contractor's personnel or permitted subcontractors, are, or deemed to be, partners, appointees, employees or agents of the City. The Contractor will not represent to anyone that the Contractor has any authority to bind the City or that the Contractor is an employee or agent of the City.
14. **No Assignment or Subcontracting.** The Contractor will not assign or subcontract (other than to persons listed in PART C (or a schedule referred to therein)), either directly or indirectly (including, without limitation, by way of any transfer of control of the shares or ownership interests in the Contractor), this Contract or any right or obligation of the Contractor under this Contract, without the prior written consent of the City, which consent may be arbitrarily withheld. No assignment or subcontract, whether consented to or not, relieves the Contractor from any obligations under this Contract. The Contractor must ensure that any assignee or subcontractor fully complies with this Contract in performing the Services and nothing in this Contract creates any contractual relationship between a subcontractor and the City.
15. **Conflict of Interest.** The Contractor must not provide any services to any person in circumstances which, in the City's reasonable opinion, could give rise to a conflict of interest between its duties to that person and its duties to the City under this Contract.

16. Release and Indemnification

a. Release

The Contractor now releases the City and the City's personnel from all losses including those caused by personal injury, death, property damage or loss, and economic loss, arising out of, suffered or experienced by the Contractor or the Contractor's personnel in connection with their performance of the Services.

b. Acceptance "As Is"

In undertaking the Services, the Contractor acknowledges that it has inspected the City's site(s), agrees to accept the site(s) "as-is" and undertakes to take all precautions necessary to ensure the safety of all the Contractor's personnel.

c. Indemnity

Despite any insurance which may be placed by the City, the Contractor now agrees to indemnify and save harmless the City and its officials, officers, employees, agents, successors, assigns and authorized representatives (in each case, an "Indemnified Party") from and against all costs, losses, claims, damages, actions and causes of action ("Claims") that an Indemnified Party may sustain, incur, suffer or be put to at any time either before or after the completion of the Services or sooner cancellation of this Contract, that arise out of any act or failure to act of the Contractor or the Contractor's personnel, permitted assignees or subcontractors in connection with the performance of this Contract, including any Claims that arise out of or are in any way related to unpaid WorkSafeBC assessments or the failure to observe safety rules, regulations and practices of WorkSafeBC, excepting always that this indemnity does not apply to the extent, if any, to which the Claims are caused by errors, omissions or negligent acts of an Indemnified Party.

d. Separate from Other Remedies and Rights

Nothing in this Contract (including this indemnity) will affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

e. Survival of Release/Indemnity

This Section 16 will survive the expiry or sooner termination of this Contract.

B. CHANGES TO SERVICES

17. **Changes.** The City may, at any time and from time to time and without invalidating this Contract, require a change to the Services and/or to the schedule for the delivery of the Services. Should the Contractor consider that any such request or instruction constitutes a change warranting amendment of the Maximum Amount, another price or the schedule for the Services set forth in the Contract, the Contractor must advise the City in writing prior to acting on any such request or instruction, and in any event within five (5) City of Vancouver business days of such request or instruction. In that case, the Maximum Amount, other price and/or schedule will be adjusted, if/as agreed to by both parties in writing, and failing agreement, if/as the City may determine, acting reasonably. Failing any such adjustment, the Services provided pursuant to the request or instruction will be deemed to be included within the prices specified herein, and to be subject to the schedule prescribed herein.

18. **Changes to Key Personnel.** The City may from time to time request reasonable changes to the key personnel of the Contractor engaged in performing the Services, and the Contractor shall comply with any such request. The Contractor shall not change any of such key personnel without the prior written approval of the City, which approval will not be unreasonably withheld.

C. PAYMENT

19. **Payment of Fees and Expenses.** In consideration for the satisfactory performance of the Services, The City will pay to the Contractor the fees specified in PART B (as supplemented by any schedule referred to therein), subject to this Section C. In addition, if the parties have specified in PART B that the Contractor's expenses are reimbursable in accordance with this Contract, the City will reimburse the Contractor for all expenses that: (i) are approved by the City in writing (in accordance with the City's existing policies and procedures for expense reimbursement) prior to their being incurred by the Contractor; (ii) are necessary, in the opinion of the City, to perform the Services; and (iii) are supported by proper receipts or other documentation satisfactory to the City (acting reasonably), provided always that the City reserves the right to make arrangements through its service providers for any flights and/or accommodations required by the Contractor in connection with its performance of the Services. If a "Maximum Amount" is specified in Part B, then the City is not, and shall not be, obliged to pay to the Contractor more than such Maximum Amount on account of aggregate fees (and, if applicable, expenses). Payment terms are "net 30 days" from the date of receipt of a valid invoice.

20. **Invoicing.** The Contractor will, by the 25th day of each month, provide to the City's Project Manager (named on the cover page of this Contract) a draft invoice with an attached detailed account of all charges to be claimed by the Contractor for the preceding month. The City's Project Manager shall review the draft, raise any concerns with the Contractor within ten working days and, after settlement of any issues (in the Project Manager's discretion), approve the draft invoice. The Contractor, if so requested, will meet with the City's Project Manager to expedite and settle the draft invoice. The Contractor will submit its final invoice, as per the approved draft invoice, to the City of Vancouver, Attention: Accounts Payable, by email to APInvoice@vancouver.ca. Each invoice must contain:

- Contractor name, address and telephone;
- City purchase order number;
- Name of the City's Project Manager;
- Invoice number and date;
- Details of any applicable taxes; and
- Tax registration number(s).

21. **Builders Lien Act.** If the Services to be performed under this Contract are subject to the holdback requirements set out in the *Builders Lien Act* (British Columbia) (the "Lien Act"), the City will withhold and discharge the required holdback amounts in accordance with the requirements set out in the Lien Act.

22. **Discharge of Liens and Withholding.** The Contractor will, if applicable, make payment and take all other steps which may be necessary so that no lien claims, including lien claims made under the Lien Act, are made in connection with the provision of the Services, and that the compensation payable to the Contractor by the City is not subject to attachment for debt, garnishing process or otherwise. In the event that any lien is filed in connection with the provision of the Services at any court or land title office, the Contractor shall immediately cause such lien to be discharged. The City may withhold from any payment due to the Contractor an amount sufficient to indemnify the City against any lien claim that could arise in connection with the provision of the Services, until such time as the lien has been discharged or other arrangements to satisfy such lien have been made by the Contractor.

23. **Withholding for Non-Residents.** If the Contractor is a non-resident of Canada, the City may withhold from any payment due to the Contractor such amounts as may be required to be withheld pursuant to the applicable provisions of the Canada *Income Tax Act* (the "ITA"). Any amount so withheld shall be remitted to the Receiver General for Canada or otherwise dealt with by the City strictly in accordance with the provisions of the ITA.

24. **Record Keeping.** The Contractor must maintain, and shall cause any subcontractors to maintain, time records and books of account, invoices, receipts, and vouchers of all expenses incurred, in form and content satisfactory to the City. The City or any of its authorized representatives will, for the purposes of audit and examination, have access and be permitted, upon reasonable notice to the Contractor, to inspect such records for review, copy and audit at any time and from time to time while this Contract is in effect and for a period of three years after the expiry or termination of this Contract for any reason.

25. **Currency.** Unless otherwise specified in this Contract, all references to money are to Canadian dollars.

26. **Electronic Funds Transfer.** The City expects to make payments by electronic funds transfer and the Contractor must provide banking information to the City in order to permit this.

D. GENERAL

27. **Time for Performance.** Time is of the essence in this Contract.
28. **Amendments.** No modification of this Contract is effective unless it is in writing and signed by all the parties.
29. **Entire Agreement.** This Contract constitutes the entire agreement between the parties as to performance of the Services, and replaces and supersedes any other agreements, correspondence or other discussions between the parties, whether or not any of the foregoing have been reduced to writing.
30. **Conflict.** If there is a conflict between a provision of a schedule to this Contract and the terms and conditions of this Services Contract, the provision in the relevant schedule is inoperative to the extent of the conflict unless it states that it operates despite a conflicting provision of this Contract.
31. **Severability.** If any provision of this Contract is determined to be void or unenforceable, in whole or in part, it shall not be deemed to affect or impair the enforceability or validity of any other provision of this Contract, and any such void or unenforceable provision may be severed from this Contract without affecting the remainder of the Contract.
32. **Termination.** The City may terminate this Contract:
- a. Upon failure of the Contractor to comply with this Contract, immediately on giving written notice of termination to the Contractor, or
 - b. For any other reason, on giving at least 10 days' written notice of termination to the Contractor.

If the City terminates this Contract under paragraph b. above, the City must pay the Contractor that portion of the fees and expenses described in PART B which equals the portion of the Services that was completed to the City's satisfaction before termination. That payment discharges the City from all liability to the Contractor under this Contract. If the Contractor fails to comply with this Contract, the City may terminate it and pursue other remedies as well.

33. **Binding Effect.** This Contract shall be binding on the Contractor's successors and permitted assigns and shall enure to the benefit of any successors and assigns of the City.
34. **Voluntary Agreement.** The Contractor acknowledges and declares that it has carefully considered and understood the terms of this Contract, that it has either consulted legal counsel or waived such right, and that it is executing this Contract voluntarily.
35. **Further Assurances.** The Contractor agrees that upon any reasonable request of the City, the Contractor will make, do, execute or cause to be made, done or executed all such other acts as may be required to more fully give effect to the terms and conditions hereof.
36. **Headings.** The headings used in the Parts and sections of this Contract are for convenience of reference only, and shall not operate to expand, modify or interpret the language therein.
37. **Counterparts.** This Contract may be executed in one or more counterparts, including by facsimile or other electronic transmission, and each of such counterparts shall be deemed to be taken together to constitute one and the same original document.
38. **Additional Terms:** The additional terms set out in Part E (or in any schedule referred to therein) apply to this Contract.

END OF TERMS AND CONDITIONS OF SERVICES CONTRACT

SCHEDULE A - SERVICES

2023 Energy Modelling Guidelines Update

Schedule

The anticipated delivery date of draft results is: Monday, May 15th, 2023

The anticipated dates of 2 proposed workshops are: Week of June 5th, 2023

The anticipated delivery date of final results is: Monday July 10th, 2023

Background

The Zero Emissions Building Plan (ZEBP¹) seeks to reduce the operational emissions of new construction in Vancouver to zero by 2030. Changes to the Vancouver Building By-law (VBBL) were approved in May 2022 to reduce greenhouse gas intensity (GHGI) targets consistent with zero emissions heating and hot water equipment for Part 3 new construction, as well as more stringent targets on climate resilience. The City of Vancouver's Energy Modelling Guidelines (EMGs) version 2.0 needs to be updated to consolidate feedback and new knowledge that has emerged since the release of version 2.0 in July 2018.

The EMGs are used by projects to demonstrate compliance to the energy and emissions limits in the Vancouver Building By-law and is also referenced by the BC Building Code in the application of the Energy Step Code (ESC) for Part 3 buildings. While the focus of the update will be to reflect Vancouver's context, proponents are encouraged to consider the implications of these updates to users of the provincial ESC and lead discussions on these implications at the stakeholder workshops (see Deliverables).

Intent

The intent of this scope of work is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025².

Scope

Throughout the delivery of this scope of work, the proponent should consider applicability or constraints of the common energy modelling software used by modelling professionals in BC for Part 3 large new buildings. Proposed modelling methodologies should work for these modelling software; otherwise provide a recommendation on whether specific software should no longer be used for the purposes of compliance modelling for VBBL or ESC.

It is up to the proponent to propose the necessary methodology to arrive at and justify each recommended change to the EMGs based on the scope items outlined below. Some recommendations may be based on professional judgment and experience of the proponent, while others may require some energy modelling effort to arrive at the recommended approach.

This scope of work is not intended to be an extensive modelling exercise. The energy modelling scope item 14) is meant to provide an overall summary to understand the impact to energy and emissions metrics based on by major impacts such as updated weather files, changes in DHW assumptions, and ventilation standards, etc. Proponents are expected to

¹<https://vancouver.ca/files/cov/zero-emissions-building-plan.pdf>

² <https://council.vancouver.ca/20220517/documents/R1a.pdf#page=34>

have access to recent and relevant completed energy models of Part 3 new buildings of different sizes to draw from for the purposes to arriving at the recommendations.

The scope of work consists of the following needs:

1) Weather files

- a) Recommend a change to the standard weather file for demonstrating compliance to VBBL from CWEC 2016 to CWEC 2020 or to another weather file. The intent is to reflect best currently available information to demonstrate compliance to VBBL energy & emissions limits at the time of design.
- b) Recommend standard weather file(s) for completing sensitivity analysis under future climate conditions (e.g. specify climate files with time-scale and Representative Concentration Pathway, or source of climate files, etc.) or the use of Reference Summer Weather Years³. See also Section 5).

2) Domestic hot water

- a) Provide recommendations on whether to include the following changes as per the recommendations of the report “Calibrating the Zero Emissions Building Plan and BC Energy Step Code”⁴
 - o increasing peak load assumption to 0.0021L/s/person (Section 3.1.4.1 of the report)
 - o adopting a seasonal multiplier to DHW use (Section 3.1.4.2)
 - o adopting a recirculation DHW heat loss factor (Section 3.1.4.3)
 - o adopting a multiplier for non-submetered DHW (Section 3.1.4.5)
- b) Suggest any other recommendations to improve modelling of domestic hot water use, if any.

3) Ventilation Standard

Provide advice on the implications of the changes to TEDI, TEUI, GHGI and CEDI using ventilation rates in ASHRAE 62.1 -2016 Ventilation and Acceptable Indoor Air Quality as opposed to current VBBL referenced ASHRAE 62.1-2001 for ventilation.

4) Overheating analysis for Passive Cooled Buildings

Recommend standardized assumptions for estimating the number of overheating hours for passively cooled buildings (section 4 of the EMGs) for the purposes of demonstrating compliance with overheating limits within VBBL and ESC. The proposed methodology or assumptions should apply to common natural ventilation and other passive cooling strategies and be simple to apply across different project designs and conditions. Include guidance on the following:

- a) Modelling natural ventilation and shading – for example, how window/patio door opening areas are calculated, how much airflow through openings, schedules of operation, external or internal operable shading.
- b) Occupant assumptions such as clothing, metabolic rate, local airspeed, etc.
- c) Other modelling assumptions such as thermal massing
- d) Recommend whether to require the calculation of operative temperature instead of dry bulb temperature in thermal comfort/overheating analysis based on ASHRAE 55 Section 5.3. Include any technical or software constraints associated with this recommendation.
- e) Recommend changes to the values in Table 4 “Acceptability Limits for Naturally Conditions Spaces in Vancouver” in Section 4 of the EMGs to a standard minimum value across all month, with the intent to accommodate projects outside of Vancouver conducting overheating hours analysis for ESC compliance.

³ <https://nrc-publications.canada.ca/eng/view/object/?id=abcd0186-37f3-4051-b752-688f04b7063c>

⁴ Crosby, S. 2019. “Calibrating the Zero Emissions Building Plan and BC Energy Step Code” Report for the Greenest City Scholars Program. https://www.researchgate.net/profile/Sarah-Crosby-2/publication/336654063_Calibrating_the_Zero_Emissions_Building_Plan_and_BC_Energy_Step_Code/links/5e583818a6fdccbeba079aa4/Calibrating-the-Zero-Emissions-Building-Plan-and-BC-Energy-Step-Code.pdf

5) Resilience to future climate and shock events

- a) For buildings with partial cooling or no active cooling: recommend a methodology for sensitivity analysis of how the number of overheating hours will shift in the future, such as time period to be modelled, the weather files to be used, etc.
- b) For buildings with active cooling: recommend a methodology for sensitivity analysis of overheating hours in the event of a power outage. Suggest a scenario and set parameters for analysis such as the duration of the power outage, the time period to be modelled, the weather files to be used, the number of overheating hours above a thermal safety threshold temperature, etc. Suggest an approach to encourage design teams to explore additional ways to reduce overheating hours during a power outage with the intent to improve the passive survivability of the building.
- c) Recommend a standard methodology and weather files to be used to analyze and report on how peak cooling and heating loads, TEDI, TEUI, GHGI and CEDI change between current and future climate scenarios. Include recommendations on how this information may be presented in the Energy & Emissions Design Report.

6) Cooling Energy Demand Intensity

Establish a standard methodology for calculating cooling energy demand intensity applicable to all building designs including those with full, partial or no mechanical cooling systems.

7) Refrigerant impact – GHGI-R

Projects will be required to account for the greenhouse gas impacts of refrigerants (GHGI-R) in the whole-building GHGI limit as of January 2025. Draft a new guidance section in the EMGs on GHGI-R that includes the following:

- a) Provide recommendation on incorporating GHGI-R estimates in early design for whole building GHGI compliance, based on existing available resources⁵. Reference existing GHGI-R calculation methodology from the Green Buildings Policy for Rezoning – Process and Requirements (amended June 14, 2019)⁶ to the EMGs and recommend updates to the methodology as necessary.
- b) Recommend whether GHGI-R reporting should be limited to mechanical cooling equipment containing more than a specified volume of refrigerant (nominally 225g)⁷ or a specific cooling capacity (19kW)⁸, or align with any other relevant standards or regulations.
- c) Update the definition of GHGI to include refrigerant impact.

8) Compliance for actively cooled buildings

As of January 2025, dwelling units within Part 3 buildings will be required to have active mechanical cooling capable to maintaining an indoor air temperature of 26°C with windows closed. Provide a recommendation on how compliance may be demonstrated through energy modelling. For example, the weather files and/or peak design condition to be used, the time period to be modelled, any mechanical system details or other compliance information or metrics to be provided by the design and modelling team, etc. Provide insight on any changes to the design and modelling teams' workflow that may be required to demonstrate compliance.

9) Form Factor for slim buildings' TEDI targets

Propose an adjustment factor for small and/or narrow buildings where TEDI targets may be difficult to achieve due to its form factor.

10) Energy efficiency recommendations

⁵ <https://vancouver.ca/files/cov/refrigerant-impact-ghgi-study.pdf>

⁶ <https://vancouver.ca/files/cov/bulletin-green-buildings-policy-for-rezoning-2019-june14.pdf>

⁷ Based on LEED v4 Credit Enhanced Refrigerant Management

⁸ Based on Zero Carbon Buildings v3

Provide technical and policy recommendation on the following items with the intent to further encourage selection of more energy efficient options:

- a. Appliances: should the current credit for EnergyStar appliances for TEUI continue, or should the default modelling assumptions for these appliances be adjusted to Energy Star requirements?
- b. Lighting – is an update to modelling assumptions for lighting necessary and are there other mechanisms to drive better more energy efficient lighting design
- c. Elevators – propose a revision to the current assumption on elevator load or an alternative modelling method to encourage the selection of more efficient elevators
- d. Laundry appliances – does the current assumptions on modelling in-suite laundry require updating?

11) Miscellaneous recommendations

Provide technical and policy recommendations on the following items. Some questions are provided as a starting point for consideration; the proponent is encouraged to provide additional perspectives as they see fit.

- a) Clarify the application of the corridor pressurization adjustment for buildings using energy/heat recovery ventilation systems for corridor supply and return air
- b) The reduction of maximum corridor pressurization adjustment value for TEDI and TEUI to 5
- c) The removal of the corridor pressurization adjustment for GHGI
- d) What space uses/types should be included within the building's Modelled Floor Area and Gross Floor Area (e.g. below grade storage or bike storage), and justifications based on anticipate impact on TEDI, TEUI, GHGI, CEDI metrics, etc.
- e) Recommend changes to the current sub-metering adjustment for hot water for space heating (see 2.7 of the EMGs), if any. Consider whether the adjustment should be removed for simplicity and/or practicality, or if the adjustment should be expanded to include TEDI and DHW heating.
- f) Recommend whether any further clarifications are needed on the role of the energy modelling professional making reference to the Joint Professional Practice Guidelines for Whole Building Energy Modelling Services⁹

12) GHG reduction target methodology for Groups A, B, and F major occupancies

Draft guidance language on the modelling steps for Groups A, B and F major occupancies with GHG reduction targets in VBBL to determine the GHG reduction target based on an all fossil-fuel baseline modelled as per ASHRAE or NECB requirements. If different modelling steps are required for ASHRAE or NECB projects or for different modelling software, provide guidance for different cases.

13) Review CSA Z5020 Building Energy Modelling Standard

Provide a high-level review of the soon-to-be published *CSA Z5020 Building Energy Modelling Standard* to identify any significant differences to technical modelling procedures or assumptions compared to the EMGs; provide recommendations on changes to EMGs if necessary.

14) Energy Modelling & Report

- a) Apply at least two archetype buildings (at least one 6-storey residential, one 7+ storey residential, etc.) that include typical buildings systems meeting current VBBL requirements, modelled under the methodologies and assumptions outlined in v2.0 of the EMGs and compare the modelled results with the major recommendations from the above list. Provide comparison of how TEDI, TEUI, CEDI, GHGI and overheating hours are affected by the recommended changes. In responding to this RFP, the proponent should specify the methodology for this step.

⁹<https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories/Document/01525AMW7JPMODAJKVYBCLHGRA24FJJPH3/Whole%20Building%20Energy%20Modelling%20Services>

- b) Provide a brief report on how various components of building energy usage may be affected by the changes listed above, along with the proponent's list of recommended changes. The report should also provide brief commentary on any significant changes to energy modelling or design workflow related to the recommended changes.

15) Engagement with stakeholders

Organize and facilitate a minimum of 2 (two) virtual workshops to share proposed changes to the following groups and gather feedback in June 2023. Create an online survey to collect written feedback to a draft version of the EMG changes. The survey should be made live in time for the workshops and remain open for 4 weeks.

- a) Workshop #1 with stakeholders to include relevant code compliance professionals from BC's Climate Action Secretariat, Building & Safety Standards Branch, BC Housing, BC Hydro, local municipalities etc., with approximate 10-20 individuals
- b) Workshop #2 with local energy modelling professionals (approximately 25-50 individuals)

Deliverables

The project will result in the following deliverables to the City:

- 1) Meetings with City staff as appropriate, including at a minimum:
 - a. Kick-off meeting to review scope and clarify assumptions;
 - b. Regular progress updates, bi-weekly as needed;
 - c. Presentation and review of preliminary findings with core City staff;
 - d. Organize and facilitate two workshops to share proposed changes to industry stakeholders, and to gather input on practical, technical or software issues and opportunities
 - e. Online survey to gather feedback from draft EMG changes
- 2) A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved;
- 3) A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI; and
- 4) A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.

SCHEDULE B - FEES AND EXPENSES

Table 1 – Commercial Table – Project Fees

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:	s.21(1)	s.21(1)
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			\$68,600 \$73,402 with PST

Table 2 – Commercial Table – Schedule of Hourly Rates

Team Members	Activity/Role	Regular Rate
Susan MacDougall	Project lead, policy expertise	s.21(1)
Riley Beise	Energy modelling & EMG expertise	
Danny Taylor	Energy modelling	
Kristian Storgard	Energy modelling	
Jennifer Blagborne	Project management (coordination, workshop & survey)	

SCHEDULE C- CONTRACTOR'S PROPOSAL

Incorporated by reference as received by the City and dated February 6, 2023

1. RECOMMENDATION

Recommendation to enter into a contract in relation to RFP PS20230002 - Energy Modelling Guidelines Update 2023 with Focal Engineering Inc. for energy modelling guidelines update services. The recommended term of the contract is six months. The contract value is \$73,402.00, plus applicable taxes, for the initial term of the contract.

2. BACKGROUND

The intent of the RFP is to update the City of Vancouver's Energy Modelling Guidelines to version 3, for new changes to take into effect in alignment with VBBL Sections 6.6.2 and 10.2 changes in July 2023 and January 2025.

3. FINANCIAL SECTION

PS20230002 Contract Values	
Project Budget	\$75,000.00
Initial Price for services	\$73,402.00, plus applicable taxes.
Estimated budget savings over the initial contract term.	\$1,598.00
Estimated procurement savings over the initial contract term.	N/A

4. PROCUREMENT SUMMARY

Date of Issuance of RFP:	January 17, 2023	
Notices Sent:	Supply Chain Management (SCM) sent notices to 4 Proponents.	
Closing Date:	February 6, 2023	
Responses Received:	Vendor Name:	Price:
	Focal Engineering Inc.	\$73,402.00
	Evoke Buildings Engineering Inc.	\$73,000.00
Departments:	Supply Chain Management (SCM); and Planning, Urban Design & Sustainability	
Compliance Checks:	Insurance & WCB	

5. EVALUATION SUMMARY

This recommendation is based on an evaluation process that reviewed and evaluated technical, financial and sustainability aspects of the Proponents proposals. The technical aspects were reviewed and evaluated by Planning, Urban Design & Sustainability. The financial and sustainability aspects were reviewed and evaluated by Supply Chain Management and Planning, Urban Design & Sustainability. The proposals submitted by the Proponents were all in compliance with the City's submission requirements.

The table below summarized the evaluation team's scores for each evaluation criteria by vendor.

Evaluation Criteria	Weighting %	Focal Engineering Inc. Score	Evoke Buildings Engineering Inc. Score
Technical Requirements	80%	78	65
Sustainability Requirements	5%	5	5
Financial (budget was published in RFP)	15%	14	15
TOTAL	100%	97	85

Focal Engineering Inc. best demonstrated the ability to meet requirements and is the recommended vendor.

6. SUSTAINABLE & ETHICAL PROCUREMENT

As part of the RFP process Focal Engineering Inc. has demonstrated compliance with the City requirements under the City's Code of Conduct.

7. RISKS

NOT APPLICABLE

8. CHANGE ORDERS

The cumulative value of all Change Orders (CO's) to this contract must not exceed \$10,000.00 without further approvals. Any changes above the contingency must follow the City of Vancouver standard change order process.

A contingency of 15% of the awarded value was discussed and confirmed with Charling Li, Project Manager.

9. CONTRACT MANAGEMENT

Contract	Person/Team Responsible	Frequency
Administration (e.g. start & end dates, compliance)	PUDS	Ongoing until services are completed
Transactions (e.g. OA, POs, GR, invoicing)	PUDS & SCM	Ongoing until services are completed

10. LEGAL

The solicitation document used for the RFP including the form of agreement included therein, was based on a template prepared by Legal Services, as required by the City's Procurement Policy ADMIN-008.

From: [Proposals <proposals@focaleng.com>](mailto:proposals@focaleng.com)
To: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
CC: "Susan MacDougall" <susan@focaleng.com>
Date: 2/6/2023 12:48:57 PM
Subject: [EXT] PS# 20230002 - Consultant Services 2023 Energy Modelling Guidelines - Focal Engineering
Attachments: PS20230002 - Consultant Services 2023 Energy Modelling Guidelines - Focal Proposal.pdf

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Hi Dino,

Please find attached a copy of our proposal for your review and consideration. If you have any questions or require additional details please let us know.

Thanks so much for the opportunity!

Jennifer Blagborne
Administrator
jennifer@focaleng.com



REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

APPENDIX 1
PROPOSAL FORM

RFP No. PS20230002, CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE (the
"RFP")

Proponent's Name: Focal Engineering Inc.
"Proponent"

Address: 467 John St, Victoria, BC, Canada, V8T 5H1

Jurisdiction of Legal Organization: Headquartered in Victoria, BC

Date of Legal Organization: Incorporated Feb 13, 2015

Key Contact Person: Susan MacDougall

Telephone: (604) 842-7893

E-mail: susan@focaleng.com

The Proponent, having carefully examined and read the RFP, including all amendments thereto, if any, and all other related information published on the City's website, hereby acknowledges that it has understood all of the foregoing, and in response thereto hereby submits the enclosed Proposal.

The Proponent further acknowledges that it has read and agrees to the Legal Terms & Conditions attached as Appendix 2 to the RFP.

IN WITNESS WHEREOF the Proponent has executed this Proposal Form:

s.15(1), s.22(1)
Signature of Authorized Signatory for the Proponent
February 6, 2023
Date

Susan MacDougall, Principal
Name and Title

s.15(1), s.22(1)
Signature of Authorized Signatory for the Proponent
February 6, 2023
Date

Riley Beise, Principal
Name and Title

Executive Summary

Provide a brief executive summary of your Proposal.

We are pleased to provide a response to the City of Vancouver RFP No. PS20230002 for updating the Energy Modelling Guidelines v2.0 (CoV EMG) to v3.0.

Proposal Overview

Our proposed approach uses 4 phases (1- Kick Off, 2- Draft Updates, 3- Public Engagement, 4- Finalize) to address the project in an efficient and timely manner. Our methodology for the most significant step (#2) is to address related updates in groups, over a semi-monthly meeting schedule with the City. This will allow for consistent feedback from and engagement with the City, reducing the need for a lengthy review/ update period at the end of the draft updates.

This approach is outlined in greater detail in the next section of the proposal, which describes the proposed schedule, deliverables and suggested methodology for each update.

Why Focal

Focal's extensive use of these guidelines over the past 6 years means that our team is intimately familiar with them. We have previously suggested some update areas to the CoV and are pleased to see several mentioned in the RFP. Our experience is acknowledged by others; for example, since 2018 BC Housing has asked us to review 30 Step Code energy model reports by others (which also use these guidelines). We have also been retained by the Building and Safety Standards Branch (BSSB) to update the province-wide Step Code Part 3 and 9 compliance tools, a project currently underway.

Focal is experienced in guideline development. We co-developed the FortisBC Commercial New Construction energy modelling program and associated guidelines and have been providing technical reviews for that program since 2018 and administering it for over a year. The majority of these energy model submissions use the CoV EMG.

In addition, we believe that our extensive experience with codes and committees, including: the BC Energy Step Code, having participated on the technical sub-committee since before the code was enacted; the CSA Z5020 committee; the EGBC Professional Practice Guidelines reviews, and others, positions us well to provide these kinds of updates.

We would value the opportunity to contribute to updating these guidelines and helping move the industry forward.

Background

Focal Engineering Incorporated was established in 2015 in beautiful British Columbia. Headquartered in Victoria, we provide engineering consulting services to the building industry across Canada, with a focus on energy efficiency and sustainability for new and existing buildings. We are "energy engineers" with a whole-building approach and understand the relationship between building systems, their impact on energy performance and emissions, and the health and comfort of occupants. Our philosophy is to produce results that benefit our clients, our community, and the environment.

Focal Engineering is owned by Susan MacDougall and Riley Beise, who together have over 30 years of energy modelling and design experience. The two principals are supported by two seniors and a team of dedicated energy modellers and administrators.

Approach to Performing Scope of Work

Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.

Proposed Approach

Our team proposes the following approach which uses project phases and associated sub-tasks to address RFP scope items 1) through 15).



Deliverables

The major deliverables identified for this project include:

- Documentation
 - City of Vancouver Energy Modelling Guidelines v3.0
 - Methodology Report
- Meetings
 - Seven 1-hr, semi-monthly meetings with the City, plus kickoff and wrap up; all online
- Public Engagement
 - Two workshops
 - Online survey

These phases, tasks and associated deliverables are described in more detail in the Detailed Methodology section.

Analysis Approach

To avoid extensive use of modelling, per the RFP, we propose addressing these updates using analysis, tools, and references such as:

- Excel analysis
- Tools such as Building Pathfinder, where relevant

- **s.21(1)** of other published materials from reputable sources
 - [NRC's Climate Resilience Buildings: guideline for management of overheating risk in residential buildings](#)
 - [BC Housing's Overheating & IAQ Design Guide Supplement](#)
 - [BC Energy Step Code Metrics Report](#)
 - [Step Code Part 3 Analysis for Public Review](#)
 - [Step Code Public Sector Building Report v2](#)
 - [Fraser Health Authority's Establishing Design Conditions for Climate Resilient Planning and Design of Health Facilities in British Columbia](#)
- Focal database
 - Focal has a data set of dozens of Step Code projects that use the CoV EMG v2 (note that not all of our 100+ models are in the database yet). We will use some of the anonymized data to provide recommendations, as relevant and permissible.
 - We could consider asking whether FortisBC would allow some of the 50(ish) energy model submissions that have been reviewed through their program to be anonymized and used in this analysis.
 - For the projects that require energy modelling, per RFP scope item 14, we recommend obtaining permission from BC Housing to use some of their models early in Phase 2.
- City Data Set
 - Ideally, if a data set summarizing key attributes from ZEBP applications could be provided by the City, this would be a great supplement to any data provided by Focal.

Other Considerations

Our team realizes that updates to these guidelines could have implications to future versions of the British Columbia Building Code (BCBC) and will keep this in mind throughout the project. For example, the rest of BC includes climate zones different to Vancouver's, that may require separate considerations.

The RFP also requested considering constraints on common energy modelling software. This can be considered as part of the overall guideline update, and might fit naturally into the assessment of the EGBC/ AIBC PPG.

Detailed Methodology

Phase 1: s.21(1)

Our team will prepare for and attend the kickoff meeting. We anticipate this will be used to review scope, finalize the workplan, clarify assumptions, and coordinate other such project details. Suggested topics include:

s.21(1)

If the kickoff occurs in early February, we will begin subsequent tasks at an earlier date.

Phase Deliverables

- Kickoff meeting with the City of Vancouver (1-hr)

Phase 2: s.21(1)

s.21(1)



s.21(1)



s.21(1) . After receiving feedback from the City, we will update the draft guidelines and methodology sections for the end of April.

s.21(1)



s.21(1) . After receiving feedback from the City, we will update the draft guidelines and methodology sections for the end of April.

s.21(1)



s.21(1)



s.21(1) After receiving feedback from the City, we will update the draft guidelines and methodology sections for the next meeting.

Finalize Drafts (Meeting: end April)

We have built in a buffer to wrap up RFP scope items by the end of April, so the latter half of April is intended for Focal to finalize any updates to the draft guideline and methodology report based on feedback from the City. If all updates went smoothly, we will use the additional time to work on the Report Methodology and begin on the next task.

Task Deliverables

- Semi-monthly meetings (total of 4, 1-hr each)
- Draft guideline updates and report methodology for each meeting

s.21(1)

Based on the findings from Task 2, and feedback from the City, we will make any necessary updates to the Guidelines and associated Methodology Report.

Focal will issue a draft version of both documents to be used for the public engagement phase. This report will also detail the impacts of the proposed updates found in the aforementioned energy modelling comparison described by scope item 14) in the RFP.

In May we will also begin preparing the survey and setting up attendance for the workshops, which will be ready in June. Several of these coordination tasks will be handled by our administrative team, while the technical team finalizes the draft documentation.

Task Deliverables

- Semi-monthly meetings (total of 2, 1-hr each)
- Draft CoV EMG v3 for public engagement
- Draft Methodology Report for public engagement

Phase 3: Public Engagement (June)

Note: The survey will be prepared and workshop planning will begin in May (during the previous phase).

Task 1: Create and send out Survey

Focal will develop and make available an online survey to gather feedback, which will be accessible for the month of June. This survey will be open prior to the virtual workshops. We propose using a free tool such as Survey Monkey, or one provided by the City.

Task 2: Workshop 1

Focal will organize and facilitate a virtual workshop to share proposed changes to the Energy Modelling Guideline for code compliance professionals. We understand that this workshop will be invitation-based with approximately 10-20 attendees, last 1.5-2 hours, and scheduled for early June. We propose a short presentation for the workshop, to outline key updates to the guidelines, followed by time for discussion, Q&A and feedback from the participants.

Task 3: Workshop 2

Focal will organize and facilitate a second virtual workshop to share proposed changes to the Energy Modelling Guideline, open to any interested attendees. We understand that this workshop will also last 1.5-2 hours and will be scheduled for early June. We propose using the same presentation outlining key updates, followed by time for Q&A and participant feedback.

After both workshops are complete and the survey has been wrapped up, we will meet with the City to discuss the feedback and any potential updates.

Phase Deliverables

- Online Survey
- Two Workshops
- Meeting

Phase 4: Finalize Documents (July 10)

Based on the meeting with the City, Focal will produce a final electronic version of the proposed CoV EMG v3.0, with tracked changes. A clean version will also be available for distribution. A final copy of the Methodology Report will also be provided. Focal will attend a wrap-up meeting with the City to present the final deliverables, and complete the project.

Please note that while the final product has been requested by July 10th, if the survey closes at the end of June, more time may be requested to meet, then finalize the documents, depending on the level of updates required.

Phase Deliverables

- Final documents: CoV EMG v3.0 & Methodology Report
- Wrap-up meeting

Assumptions

Our proposal is based on the following assumptions:

s.21(1)



Project Experience

RFP Specific

A sample of Focal's modelled projects that meet the size requirements outlined in the RFP and use past versions of the CoV EMG are listed below. While most are within Climate Zone 4, we have also provided some that s.21(1)

7+ Storey MURB

s.21(1)



6-Storey MURB

s.21(1)



<6-Storey MURB

s.21(1)



Other Related Project Experience

Focal has modelled over 100 Step Code models using the CoV EMG. Examples outside the RFP archetypes are noted below, along with some of our industry leadership and technical committee experience. More information is available upon request.

Step Code Projects

s.21(1)

A large rectangular area of the document is redacted with a solid grey fill, covering the content under the 'Step Code Projects' heading.

Energy Modelling Industry Leadership

s.21(1)

A large rectangular area of the document is redacted with a solid grey fill, covering the content under the 'Energy Modelling Industry Leadership' heading.

Related Technical Committee Experience

In addition to our project experience, members of our team sit on several committees that are assisting in development of new energy and climate analyses parameters:

s.21(1)

A large rectangular area of the document is redacted with a solid grey fill, covering the content under the 'Related Technical Committee Experience' heading.

Key Personnel

Identify and provide professional biographical information for the key personnel that would perform the required services. Indicate the level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.

Susan MacDougall

P.Eng., FEC, LEED AP BD+C, CPHC | Principal

s.22(3)(d)

Riley Beise

P.Eng., BEMP | Principal

s.22(3)(d)

Danny Taylor

CPHD | Associate

s.22(3)(d)

Kristian Storgard

E.I.T. | Energy Modeller

s.22(3)(d)

Jennifer Blagborne

Administrator

s.22(3)(d)

References	
Client Name # 1	Building and Safety Standards Branch (BSSB) Ministry of Housing
Address (City and Country)	Victoria, BC, Canada
Contact Name	Scott Williams
Title of Contact	Senior Codes Engineer
Telephone No.	236.478.2043
E-mail Address	Scott.B.Williams@gov.bc.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

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	s.22(3)(d)
Client Name # 2	BC Housing
Address (City and Country)	Vancouver, BC, Canada
Contact Name	Wilma Leung
Title of Contact	Senior Manager, Technical Research and Education
Telephone No.	778.452.6444
E-mail Address	wileung@bchousing.org
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	
Client Name # 3	Township of Langley
Address (City and Country)	Langley, BC Canada
Contact Name	Kevin Ramlu

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Title of Contact	Green Buildings Manager
Telephone No.	604.533.6119
E-mail Address	kramlu@tol.ca
Length of Relationship	s.22(3)(d)
Type of Goods and/or Services provided to this Client	

Subcontractors

List all of the subcontractors that the Proponent proposes to use in carrying out the required services and described the scope of subcontracted work (or write "None" if no subcontractors are proposed).

None proposed

Declaration of Supplier Code of Conduct

The City of Vancouver expects each supplier of goods and services to the City to comply with the supplier performance standards set out in the City's Supplier Code of Conduct ("SCC") < >, which defines minimum labour and environmental standards for City suppliers and their subcontractors. To give effect to these requirements, an authorized signatory of each proposed vendor must complete the following declaration.

As an authorized signatory of Focal Engineering (vendor name), I declare that I have reviewed the SCC and to the best of my knowledge, Focal Engineering (vendor name) and its proposed subcontractors have not been and are not currently in violation of the SCC or convicted of an offence under national and other applicable laws referred to in the SCC, other than as noted below (include all violations/convictions that have occurred in the past three years as well as plans for corrective action). I understand that a false declaration and/or lack of a corrective action plan may result in no further consideration being given to the submission of Focal Engineering (vendor name).

s.15(1), s.22(1)

Signature: _____

**REQUEST FOR PROPOSAL NO. PS20230002
CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE**

Name and Title:	Susan MacDougall, Principal
Exceptions to Declaration:	
None	

Conflicts, Collusion, Lobbying
See Article 9 of Appendix 2 for instructions.
Declare no conflicts, collusion or lobbying per Article 9 of Appendix 2.

Table 1 – Commercial Table – Project Fees (please complete as stated in Part B – Deliverables Work Scope).

	Description by Activities	Estimated Hours	Total Estimated Fee
1	Meetings with City staff, including review of preliminary findings, workshops with stakeholders and online survey for feedback:	s.21(1)	s.21(1)
2	A preliminary draft of changes to the Energy Modelling Guidelines detailing initial recommendations and questions to be resolved		
3	A final report outlining the methodology taken to arrive at the recommended changes, including a table listing the impacts of major recommended change on TEDI, TEUI, GHGI and CEDI		
4	A final electronic version of the Energy Modelling Guidelines v3.0 with tracked changes, which incorporates the feedback from stakeholders and discussions with the project team.		
Totals (fees should include PST but exclude GST)			\$68,600 \$73,402 with PST

Table 2 – Commercial Table – Schedule of Hourly Rates (for additional services if required)

Team Members	Activity/Role	Regular Rate
Susan MacDougall	Project lead, policy expertise	s.21(1)
Riley Beise	Energy modelling & EMG expertise	
Danny Taylor	Energy modelling	
Kristian Storgard	Energy modelling	
Jennifer Blagborne	Project management (coordination, workshop & survey)	

Supplier Diversity

Please note that these Supplier Diversity questions are optional but may form part of the evaluation of this RFP. Proponent answers to Supplier Diversity questions are for information gathering purposes only and will be kept confidential in accordance with the Legal Terms and Conditions of this RFP.

In the space below, indicate the Proponent's company profile with regards to social value and economic inclusion supporting equity, diversity, inclusion and reconciliation, including social/environmental certifications, workforce diversity and/or if owned/controlled by an equity-seeking demographic (including but not limited to non-profit, cooperative, Women, Indigenous Peoples, Ethno-cultural People (minorities, newcomers, immigrants), persons with disabilities or LGBTQ+ people).

Majority owned/controlled/ by:	Workforce Diversity:	Social / Environmental Certifications
s.21 (1) <ul style="list-style-type: none"> Women (50%) Indigenous Peoples Non-Profit/Charity (Social Enterprise) Coop Community Contribution Corporation (3C/CCC) Ethno-cultural Persons People with Disabilities LGBTQ+ Other: please indicate 	<ul style="list-style-type: none"> 45% Women % Indigenous Peoples % Ethno-cultural People % People with Disabilities % LGBTQ+ % Other: please indicate 	s. 21 (1) <ul style="list-style-type: none"> BCorp BuySocial Supplier Diversity Certification Fairtrade Green Business Certification (ie. LEED, ClimateSmart) s.21(1) <div style="background-color: #cccccc; height: 40px; width: 100%; margin-top: 5px;"></div>

From: "Li, Charling" <charling.li@vancouver.ca>
To: "Goundouvas, Dino" <dino.goundouvas@vancouver.ca>
Date: 2/13/2023 9:14:06 AM
Subject: RE: PS20230002 - Evaluation of Proposals
Attachments: PS20230002 - Evaluation Matrix (CL).XLSX
PS20230002 - Evaluators Decalaration and Evaluation Guide-signed CL.pdf

Hi Dino, attached is my matrix and signed form.

Thanks,
Charling

From: Goundouvas, Dino <dino.goundouvas@vancouver.ca>
Sent: Tuesday, February 7, 2023 8:56 AM
To: Li, Charling <charling.li@vancouver.ca>; Enright, Patrick <Patrick.Enright@vancouver.ca>
Subject: PS20230002 - Evaluation of Proposals

Hi Charling and Patrick,

As designated evaluators relating to RFP PS20230002 - CONSULTANT SERVICES –2023 ENERGY MODELLING GUIDELINES UPDATE please find the attached submissions for your individual review and scoring of the technical requirements. Pricing and hourly rates have been removed to not bias the technical scoring process.

The RFP that was issued/posted is also attached as a reference document.

Two submissions were received by the closing time from:

1. Focal Engineering Inc.
2. Evoke Buildings Engineering Inc.

Also attached is the evaluation matrix in order for each team member to individually score the submissions. Please complete the matrix including comments and return me via email by 12pm, Monday, February 13. If for whatever reason you require more time to complete the review and scoring please advised me as soon as possible.

It is also required that all evaluators must review, complete and signed the attached "Evaluators Guidelines & Declaration Form. Please complete this form as soon as possible and return to me via email.

If you have any questions or clarifications please contact me.

Regards,
Dino
604.871.6812

RFP PS20230002 - CONSULTANT SERVICES – 2023 ENERGY MODELLING GUIDELINES UPDATE

Evaluation Guide: 0 = Unsatisfactory 1 = Poor 2 = Average 3 = Good 4 = Very Good 5 = Excellent

- 0 = Unsatisfactory** The Submission is Unsatisfactory with the Proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor** The Proponent barely satisfies the criteria. Significant risk may exist if proceeding with the supplier and would require major effort to develop a satisfactory performance level.
- 2 = Average** The Proponent is able to satisfy the criteria but further evidence and information is required to test and substantiate performance level claims.
- 3 = Good** The Proponent has demonstrated that the criteria have been clearly satisfied and that they understand the requirements substantiated by detailed explanation. Actual experience may be limited in some areas.
- 4 = Very Good** The Proponent has demonstrated that the criteria have been clearly satisfied and substantiated by experience in providing a significant level of beneficial insight and knowledge in the proposed solution.
- 5 = Excellent** The Proponent has clearly demonstrated that they satisfy or exceed the criteria by proposing a superior solution, substantiated with experience, knowledge and references.

Evaluation - Technical Proposal (Dept. to review)		Evolve			Focal											
Evaluation Criteria	Weight	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score	Evaluator Remarks	Score (0-5)	Weighted Score
Key Personnel Did the proponent demonstrate their level of experience key personnel have in reviewing energy modelling work by others outside of the proponent's organization or exposure to challenges experienced by modellers outside their organization, and depth of experience on policy and code recommendations.	25%	s.13(1)														
Executive Summary Provide a brief executive summary of your Proposal.	5%															
Approach to Performing Scope of Work Clearly describe the methodology and project work plan for performing the work. Include an estimate of how much energy modelling effort is planned compared to other methods of arriving at technical recommendations (e.g. past project experience, etc.). Provide an indication of the number, types and sizes of building designs that the proponent's organization has access to in carrying out this work.	50%															
Sustainability (Environmental and/or Social) - See Response to Supplier Diversity section/checklist to be completed by SCM	5%															
SUBTOTAL OF TECHNICAL SCORES		85%		81.0%		80.5%				0%			0.0%			0.0%
General Remarks (MANDATORY)		s.13(1)														



EVALUATOR'S GUIDELINES AND SCORING MANUAL

REQUEST FOR PROPOPAL PS20230002

CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

February 7, 2023

Dino Goundouvas
Supply Chain Management

1. Introduction

Thank you for your participation in the evaluation of this request for proposals (RFP).

These guidelines are provided to:

- 1) assist you with your evaluation
- 2) maintain consistency amongst evaluation team members in the determination of a successful proponent
- 3) ensure that there is no conflict of interest in your participation in this evaluation. In accordance with the policies prescribed by the City of Vancouver.

Proponents spend a significant amount of time and resources preparing and supporting the offers they submit to provide products and professional and technical services to the City. The City benefits from this investment since it contributes both quality and choice to the City's strategic plans. In return for this effort, proponents are entitled to a full and fair evaluation.

This document is designed to assist evaluators in their evaluation of proponents' submissions and to help ensure the establishment of a clear record for the rationale used in assigning scores against the stated evaluation criteria. The City must be prepared to provide all proponents with feedback on a criterion-by-criterion basis and be able to support the reasons for the scores assigned by the evaluation committee.

2. Conflict of Interest

Any member of the evaluation committee who feels that they are, or may be, in a conflict of interest must declare this fact to the RFP Facilitator. If a potential conflict is disclosed, the RFP Facilitator will need to decide whether the member will be permitted to remain as an Evaluator. The Standards of Conduct for Public Service Employees Engaged in Government Procurement Processes provide a number of examples of conflict of interest. A conflict could exist if the individual:

- (i) has a friendship or familiar relationship with one of the proponents; or
- (ii) works for a company that is submitting a response; or
- (iii) has a strong bias for, or against, one of the proponents; or
- (iv) has a significant interest in a company submitting a response; or
- (v) has a direct or indirect financial interest in a proponent's business; or
- (vi) has an immediate family member who has input into a proponent's proposal; or
- (vii) has assisted in the preparation of a proposal; or
- (viii) has received a gift from one of the proponents.

All Evaluators are required to sign Non-disclosure and Conflict of Interest declaration forms which state the terms and conditions of conduct for the evaluation process. **Please**

be aware that all documents are subject to disclosure under the Freedom of Information and Protection of Privacy Act of British Columbia.

3. General

During the evaluation process, it is important to treat all proponents fairly and equally, and to evaluate their bids in accordance with the process described in the RFP. Care must be taken throughout the process not to take any actions or make any decisions that could be construed as providing an unfair advantage to any proponent.

Therefore:

- Each evaluator must act independently and be free from bias and conflict of interest, act objectively and consider only the information received via the RFP process. This means that the scoring must be based strictly on the merits of the proposal.
- It is each evaluator's responsibility to ensure all documentation related to the evaluation process is kept secure at all times;
- Evaluators are not to discuss the evaluation, scores or any issues of the RFP with any of the proponents or vendors;
- Evaluators should avoid discussing any aspect of the evaluation or share any information submitted, including submissions or other related documents with anyone INCLUDING other members of the evaluation committee (unless this discussion is being facilitated by the RFP Facilitator); and
- All questions should be directed to the RFP Facilitator.

4. Evaluation Procedure

Prior to reading or scoring the Proposals, the evaluator should read the RFP document, Questions and Answers, and any amendments or addenda. Copies of these documents will be provided by the RFP Facilitator.

- a. Accompanying this evaluation guidelines document is the RFP Evaluation Form for each proposal. The evaluator is required to write his/her name on each RFP Evaluation Form.
- b. Proposals must be evaluated on their individual merits against the evaluation criteria stated in the RFP PS20230002 and awarded scores using the scoring guidelines provided.
- c. Scores must not be awarded by comparing proposals against each other.
- d. Only information enclosed in the proposals may be used during the evaluation process. Information about or knowledge of the proponents that are external to the proposals must not be used in the assessment of proposals.
- e. On the RFP Evaluation Form, the scoring scale (0 to 5) is located at the bottom of each page and explained in more detail in the following Section 5. Each evaluator is to enter, in his/her opinion, the most applicable level as judged in meeting the requirement, and provide a brief explanation substantiating the score. For example, is there anything lacking or outstanding in the Proponent's response. Also, comments should be provided if an item receives a score of 0, 1, 4, or 5.

- f. At the end of the scoring section, a general comments section has been provided where the evaluator has an opportunity to provide further comments with respect to the proposal. *These comments are important for debriefing unsuccessful proponents.*
- g. Each category has been assigned a weighting value. The combination of the weights and all scores will be calculated to determine the highest rated proponent(s). This may provide the basis for determining a short-list of proponents or a successful proponent, if any, after all factors have been considered.
- h. When evaluating the proposals, the following procedure is recommended:
 - (i) Read the proposal in its entirety before making any notes or assessing any scores. This will provide you with an overview of what is being proposed.
 - (ii) Go to the sections in the proposal you have been asked to evaluate, and read through the entire section(s). Make notes where applicable.
 - (iii) Read the section again, assess and provide a score for each criterion and include brief comments that substantiate your decision. The comments may be referred to in any post assessment evaluators meeting; they are also beneficial for preparing any debriefing reports or meetings.
- i. When all proposals have been evaluated, check to ensure that all items have been addressed and that there are no omissions. Return the RFP Evaluation Form to SCM to compile and summarize the scores.

5. Evaluation Assessment Guidelines

Note: In the absence of any additional instructions provided by SCM to the team, please consider the following as the guideline for assessment.

Following are the assessment guidelines for scoring the proposals:

- 0 = Unsatisfactory:** The proposal is unsatisfactory, with the proponent having failed to meet the essential criteria and is extremely unlikely to meet the requirement.
- 1 = Poor:** The proponent barely satisfies the criteria. Significant risk may exist if proceeding with the proponent, requiring significant effort to develop a satisfactory performance level.
- 2 = Average:** The proponent is able to satisfy the criteria but further information is required to substantiate the proponent's claims of compliance with the particular requirement.
- 3 = Good:** The proponent has demonstrated that the requirement has been clearly satisfied and a sound understanding of the particular requirement, substantiated by detailed explanation and other supportive evidence. Related experience may be limited in some areas.
- 4 = Very Good:** The proponent has clearly demonstrated that the requirement has been satisfied, substantiated by a strong level of related

experience and in providing a significant level of beneficial insight and knowledge in the proposed solution.

5 = Excellent: The proponent has clearly demonstrated that they exceed the requirements by proposing an exceptional solution, substantiated with a strong level of understanding of the City's requirements plus related experience, resources, knowledge, skills and references.

All criteria will be assessed using the scoring guidelines outlined above.

The score for 'Price' will be determined by SCM using a formula outlined below whereby the lowest price for the complete package requested gets the full points available and the other pricing proposals are rated in relation to the lowest price.

The following formula will be used:

$$S = ((Lp / P) * W) * 100 \text{ where:}$$

S = Weighted percentage score
 Lp = Lowest priced bid
 P = Price
 W = percentage weight

These calculations will be done by SCM and will be shared with the evaluation committee at the evaluation meeting once the management; technical and financial scoring has been completed.

6. Evaluation Responsibilities

Category	Supply Chain Management	Evaluation Team
Terms and conditions, and high level mandatory requirements	X	
RFP administrative compliance	X	
Proponent information, references	With direction from Evaluation Team	X (references)
Business requirements		X
Other: Value-added services		X
Pricing/cost	X	
Sustainability	X	

Date:	Feb 10, 2023
Employee Name:	Charling Li
Project No.:	PS20230002
Project Title:	CONSULTANT SERVICES - 2023 ENERGY MODELLING GUIDELINES UPDATE

Please sign below after completing the following:

1. I understand my role in ensuring that I do not discuss or disclose any information while evaluating this proposal. <i>(See item 3 under General on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. I understand my role in ensuring that a conflict of interest does not occur. <i>(See item 2 under Conflict of Interest on page two of these Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
3. I believe that I might have a conflict of interest.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

If Yes has been chosen for Item 3, please explain reason for potential conflict of interest.
I have a relationship with:

Company Name: _____

Name: _____ Relationship: _____

Details: _____

s.15(1), s.22(1)


Employee's signature

Feb 13, 2023

Date

Charling Li

Print Name