

The Cryosphere Discuss., referee comment RC1  
<https://doi.org/10.5194/tc-2022-189-RC1>, 2022  
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## Comment on tc-2022-189

Anonymous Referee #1

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Referee comment on "Modelling present and future rock wall permafrost distribution in the Sisimiut mountain area, West Greenland" by Marco Marcer et al., The Cryosphere Discuss., <https://doi.org/10.5194/tc-2022-189-RC1>, 2022

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The manuscript "Characteristics and evolution of bedrock permafrost in the Sisimiut mountain area, West Greenland" presents an efficient approach for the modeling of bedrock permafrost in Greenland. Aiming at the prediction of the bedrock permafrost evolution the study considers two different regional carbon pathway scenarios to model the permafrost distribution at the end of the 21<sup>st</sup> century. Accordingly, this manuscript addresses a topic that has so far been underrepresented in the existing literature, and thus is particularly relevant for readers of The Cryosphere.

The abstract of the manuscript is well-written arousing the interest of the reader by providing a concise yet complete overview of the study. Unfortunately, in its current version the manuscript itself fails to meet the expectations raised by the abstract. While the introduction is also of good quality (objective/aim of the study are nicely described) the following sections do not adequately present the otherwise great outcome of this study. In particular, my main points of concern are:

- **Structure** The manuscript lacks a clear structure, which also affects the adequate separation of the (content in the) different sections. In particular, the authors could consider merging the Results and Discussion sections, which would allow for a more concise presentation of this really interesting study.
- **Figures** In general, the figures are of good quality and nicely prepared, i.e., by just looking at the figures the potential of the study is evident. However, not all figures are correctly referenced in the text. Moreover, the figure contents are not properly described/discussed in the text with some sub figures not being addressed at all.
- **Tables** In general, the structure of the tables is fine; yet, in the text, the authors refer to a Table 3 that is not included in the manuscript.
- **Captions** The text of figure and table captions should provide more information so that the reader can easily understand the presented content. In the current version of the manuscript, the captions lack a consistent structure and information content.
- **Numbers and Units** The authors did not implement the guidelines regarding the correct formatting of numbers and units.

- **General** I suggest that the authors consult and implement the manuscript preparation guidelines provided by The Cryosphere to ensure the manuscript meets the formatting requirements as well as general quality standards (especially with respect to sentence/paragraph structure and formulations).

Obviously, in the current version, the manuscript does not fulfill standards expected for scientific publications. However, due to the relevance of the presented study for permafrost research in Greenland and taking into account the good quality of the (final) products of the study I suggest that the manuscript should be reconsidered for publication in The Cryosphere after major revisions.

In the supplementary file, I provide detailed comments and suggestions that might help the authors during the revision of the manuscript. The annotations use the following code:

- **Highlighted (yellow)** Should be addressed/considered during the revision.
- **Highlighted (red)** Needs to be addressed/considered during the revision.
- **Strike-through (red)** Remove.
- **Underline (red)** Indicates repeated words in single sentences.

Please also note the supplement to this comment:

<https://tc.copernicus.org/preprints/tc-2022-189/tc-2022-189-RC1-supplement.pdf>