



EGUsphere, referee comment RC1
<https://doi.org/10.5194/egusphere-2022-1363-RC1>, 2023
© Author(s) 2023. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on egusphere-2022-1363

Anonymous Referee #1

Referee comment on "Detailed investigation of multi-scale fracture networks in glacially abraded crystalline bedrock at Åland Islands, Finland" by Nikolas Ovaskainen et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-1363-RC1>, 2023

The paper is well written, the methods up-to-date and the related results very interesting and statistically robust. The methods are adequately described, the limitation discussed and their reliability and representativeness of the obtained results considered as well. However, some further discussions on methods/results reliability and robustness are needed.

There is a main problem which undermines the possibility to publish the present manuscript in Solid Earth: the aim of the research is not clearly stated and thus it is not clear if the presented methods and results are significant or have any relevant implications for the case study or what are the broader implications for the general analyses of lineament maps from remote sensing. Stating clearly what are the aims and how the presented methods/results can answer to the research questions will also help in reorganizing logically the discussion sections. The paper would be also good if it was clearly focused on the presentation of the new analytical tools and the results adopted for the characterization of a case study, but still the case study need to have a clear aim. I think that the Authors can re-arrange the present manuscript with little effort in order to solve this main issue, otherwise I would suggest to redirect the manuscript to a more specialized journal.

Main issues:

- The aim of the research and the conclusions/implications of the results need to be explained a little bit more, they are not immediately understandable from reading the present manuscript. Especially in the Abstract, Introduction (where the aims are

- sparingly presented in bit and pieces) and in the conclusions.
- There is a discrepancy between the “results and conclusions” (sparingly) reported in the introduction section and the final Conclusions of the paper in Section 6. Are the methods and results presented here resolute for the problem they aim to solve?
 - The cut-off issue needs to be properly discussed in depth. What is the statistical significance of a results based on the analysis of only the 3% of the total dataset? Is it representative of the whole distribution? This needs to be discussed from the methodological point of view (is the analytical method adequate to analyse our dataset?). Is the results based on the 3% of the data representing the entire length distribution?

Minor comments.

- Some part need to be rephrased to be a little bit more concise (the part of the discussion regarding glacial erosion)
- Reconsider the use of “e.g.”,
- Rephrase the section Lines 92-99 : to be moved to the method section and integrated with the exiting description of the data source.
- Line 206: “?”?