

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
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Comment on nhess-2022-166

Anonymous Referee #1

Referee comment on "Lava flow hazard modeling during the 2021 Fagradalsfjall eruption, Iceland: applications of MrLavaLoba" by Gro B. M. Pedersen et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-166-RC1>, 2022

Revision

The paper is a chronological narration of how the software MrLavaLobe was used and modified during the 2021 Fagradalsfjall eruption occurred in the Reykjanes peninsula, Iceland. The manuscript is really interesting, and some sections are also compelling. But the text has some problems. In the manuscript, the authors initially describe the eruption, referring to a work in press, and this description seems a summary of the cited work. Then they describe the software without focusing on input parameters and procedures but describing the functionality with a qualitative approach. Then narrate the eruptive crisis and the results of the software used in real time. Finally, they describe the modification and the improvements to the software that were necessary to communicate with the stakeholders and predict lava inundation in a future eruption. The manuscript is too long and, while reading, the scientific motivations of the work are lost. The manuscript also lacks a clear introduction to the software and this lack impedes a full understanding of the reported improvements if not by reading the original paper and making comparison with this one.

I found the manuscript having a journalistic approach, not suitable for a scientific journal. Otherwise, if the authors intended to publish a technical report about the software improvements due to a real time application, then they should remove the chronological description of the happenings and concentrate on the technical improvements of the software and its application to the 2021 Fagradalsfjall eruption.

I appreciated the paper that is well organized in sections but it is too long and the text gets lost in long explanations that could be summarized and made simpler. Moreover, in the manuscript I found some repeated sentences that authors should eliminate. The English is somewhere not fluent and I requested to rewrite some sentences. Sentences are often too long and dispersive; verbs are somewhere used in the wrong way.

I also found that figures are not correctly cited and in the section 2 a figure or a citation to a figure is missing.

Fig.1a and 1b are never cited in the text, while the paragraphs 2 and 2.1 need reference to figures to understand the geography and the eruptive history. The same occurs for other figures. I suggest inserting in the text the right citations of all the figures by indicating also the figure boxes useful in the text.

I attached the pdf of the manuscript where I put my comments with suggestions and critical points, but the list is not exhaustive. I think that the authors should do an effort to re-reading the manuscript and re-writing the longer and twisted sentences and eliminate repetitions. The authors should also rethink the qualitative setting given to their paper substituting the long descriptive part with short quantitative sentences. For these reasons I suggest a major revision.

Please also note the supplement to this comment:

<https://nhess.copernicus.org/preprints/nhess-2022-166/nhess-2022-166-RC1-supplement.pdf>