



EGUsphere, referee comment RC2  
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## **Comment on egusphere-2022-644**

Anonymous Referee #2

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Referee comment on "Subaerial and subglacial seismic characteristics of the largest measured jökulhlaup from the eastern Skaftá cauldron, Iceland" by Eva P. S. Eibl et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-644-RC2>, 2022

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This preprint describes the largest measured subglacial flood from the Eastern Skafta cauldron in Iceland in 2015. The Authors aim to improve the current understanding of processes behind seismic signal generation during subglacial floods. Thanks to the analysis of seismic, GPS, and hydrological observations, the Authors propose two source mechanisms from tremor signal generation: geothermal boiling of water in crustal rocks and repeating icequakes caused by glacier lift.

Yet, most of these observations and the same event have been already published in the paper by Eibl et al., 2020. Moreover, the Authors used the same methods to analyze seismic data. I believe that for this paper to be published, more new information or novel processing approaches should be explored. Some of the claims seem speculative now; for example, the authors propose that tremor 1 is associated with repeating icequakes. This can be very easily verified with clustering methods (e.g., RedPy, Hotovec-Ellis et al., 2019) or template matching (Beaucé et al., 2018). For now, I do not see much value added and novelty compared to Eibl et al. 2020 paper, which, unfortunately, does not allow me to accept this preprint.

### References:

Beaucé, E., Frank, W. B., and Romanenko, A.: Fast Matched Filter (FMF): An Efficient Seismic Matched-Filter Search for Both CPU and GPU Architectures, *Seismological Research Letters*, 89, 165–172, <https://doi.org/10.1785/0220170181>, 2018

Eibl, E.P.S., Bean, C.J., Einarsson, B. et al. Seismic ground vibrations give advanced early-warning of subglacial floods. *Nat Commun* **11**, 2504 (2020).  
<https://doi.org/10.1038/s41467-020-15744-5>

Hotovec-Ellis, A. and Jeffries, C.: Near Real-time Detection, Clustering, and Analysis of Repeating Earthquakes: Application to Mount St. Helens and Redoubt Volcanoes, in: Presented at Seismological Society of America Annual Meeting, 2016