

Interactive comment on “Lake outbursts of the eastern part of the Larsemann Hills, East Antarctica, through snow and ice dams” by Alina Boronina et al.

Anonymous Referee #2

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This manuscript describes observations and analysis of lake drainage events of periglacial lakes in East Antarctica. While the topic is highly interesting due to several reasons (e.g. relation to climatic variations, effect on the local environment), the manuscript severely lacks in clarity, scientific confirmability and valid conclusions.

The structure of the manuscript is rather unclear with information about the lakes, their setting, geometry and environmental conditions spread across different sections. Data are not clearly presented (e.g. no information about the bathymetry tracks across the lakes), figures miss important information (e.g. locations of the drainage channels) and the presentation of the results is spread over the text without a concise summary

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(structured tables would probably help a lot to show the main findings instead of long sentences filled with numbers).

The modelling approach is not presented at all. Instead there is only a reference to the relevant paper. There needs to be at least a short presentation of the physical basis, the assumptions taken and the restrictions of the model. Otherwise, the results cannot be evaluated with respect to their reliability.

Also, relevant literature to ice dam failures and drainage are not found in the manuscript (see some examples below). Even though the observations are rather valuable and there is a large potential for obtaining more insights into such type of failures, the conclusions are rather weak and do not exploit the wealth of information which could be deducted from a thorough analysis.

Raymond, C. F., & Nolan, M. A. T. T. (2000). Drainage of a glacial lake through an ice spillway. IAHS publication, 199-210.

Carrivick, J. L., Tweed, F. S., Ng, F., Quincey, D. J., Mallalieu, J., Ingeman-Nielsen, T., ... & Russell, A. J. (2017). Ice-dammed lake drainage evolution at Russell Glacier, West Greenland. *Frontiers in Earth Science*, 5, 100.

Kingslake, J., Ng, F., & Sole, A. (2015). Modelling channelized surface drainage of supraglacial lakes. *Journal of Glaciology*, 61(225), 185-199.

Mayer, C., & Schuler, T. V. (2005). Breaching of an ice dam at Qorlortossup tasia, south Greenland. *Annals of Glaciology*, 42, 297-302.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2019-149>, 2019.

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