

Interactive comment on “A temperature- and stress-controlled failure criterion for ice-filled permafrost rock joints” by Philipp Mamot et al.

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Dear referee,

We thank the referee for his positive feedback, the constructive comments and valuable hints to further publications connected to our work. We addressed all comments and changed the manuscript accordingly.

The improvements in the revised manuscript addressing the main points of criticism are summed up as follows: (i) Missing key publications, for instance, Yamamoto and Springman (2014), Gischig et al. (2011), Ulusay (2015), Yasufuku et al. (2003), Coulomb (1773), Mohr (1900), Schön (2015), Hall and Thorn (2014) were added to the text and included in the discussion. (ii) and (iii) We included a comparison between

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our findings and those by Davies et al. Further, we marked the valid temperature range for the failure criterion (Fig. 8) to stress the fact that the calculated equations for cohesion and friction are only valid for temperatures between -0.5 and -8 °C. Hence, we cannot say anything about the behaviour of cohesion and friction between -0.5 and 0 °C. In the author response we explained in detail why we use linear fits.

All detailed changes are listed in the uploaded *.pdf-file.

Philipp Mamot and co-authors

Please also note the supplement to this comment:

<https://www.the-cryosphere-discuss.net/tc-2018-57/tc-2018-57-AC1-supplement.pdf>

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-57>, 2018.

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