

Interactive comment on “Contrasting thinning patterns between lake- and land-terminating glaciers in the Bhutan Himalaya” by Shun Tsutaki et al.

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Dear authors,

I have now received three reviews of your paper. I have read them carefully and I would like to thank the reviewers very much for their detailed and thorough comments. All three reviewers agree that substantial revisions of your paper are required, and I agree with their overall evaluation and the main points raised by the reviewers. In particular, you need to address the large uncertainties in all four main steps of calculations: i) estimates of thinning rates from interpolation of DGPS measurements; ii) debris thickness estimation from ASTER thermal imagery; iii) surface energy balance (SEB) modelling;

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and iv) flow modelling. This is a concern shared by all reviewers, related to a lack of validation of those calculations, which questions your final results. All reviewers share a concern for the very high values of SEB obtained over the debris-covered areas (7m w.e./a, Section 4.4.). You should also clarify the different periods that the calculations refer to and how this affects your results. I also agree with the fact that three glaciers are presented but one, Lugge II, is not included in the ice dynamics model experiments, is barely discussed in the results and discussion and is not included in the abstract, and this inconsistency should be resolved.

The reviewers all make important suggestions to improve your paper. A second round of reviews will most likely be required after revision. I encourage you to thoroughly address all concerns raised by the reviewers and look forward to receiving the revised manuscript.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-15>, 2018.

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