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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Assessment of Evolution of Mountain Lakes and Risks of Glacier Lake Outbursts in the Djungarskiy (Jetysu) Alatau, Central Asia, using Landsat Imagery and Glacier Bed Topography Modelling" *by* Vassiliy Kapitsa et al.

Anonymous Referee #1

Received and published: 3 July 2017

This is a solid regional-scale assessment of potential dangers from the outbursts of mountain lakes, using repeat satellite images, and related glacier bed modelling to identify overdeepenings. Good work! I recommend acceptance after minor revisions, some of which I think are important to consider, though.

Important comments:

Line 17 (L17) and at several places the 6.2% and 6.6% lake growth was confusing to

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me, because its significance level is unclear. Better focus (as done later, L365) on the number of lakes that showed significant growth, or similar. Note, changes without error bars, or some other indication of uncertainty are worthless. And I don't understand the mean value of uncertainty L200 and its meaning in this context.

L273: threshold for what? L275: how good is the ASTER GDEM in particular over steep terrain, and how reliable is thus this slope threshold computation?

L323: can you explain why you use the ASTER GDEM for slope assessments and SRTM for glacier bed estimation?

Other comments:

- the paper needs some grammar corrections, but I believe this is done by Copernicus.

- the title is quite long. Try to shorten?

L18, L132: contact with what?

L215: are their supraglacial lakes in the region? Is none of the ice contact-lakes ice-dammed? Sure?

L299: sudden and complete drainage?

END

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