

Interactive comment on “Brief Communication: Contending estimates of early 21st century glacier mass balance over the Pamir-Karakoram-Himalaya” by A. Kääb et al.

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General comments:

This contribution is a valuable extension to the study of Kaab et al., 2012 to include several poorly studied parts of the Himalaya and neighbouring ranges. Given that the methods are largely detailed in this previous study, it makes sense that they are not repeated here. The results are clearly presented and discussed and will make a further excellent contribution to the literature. The additional discussion relating to SRTM penetration is interesting and of value to many other related studies.

Specific comments:

C2691

I have two specific comments. The first relates to the conclusions of the study. Several of them were a bit surprising, in that they weren't an obvious outcome of the study (until I read them). I therefore suggest the authors revisit the stated conclusions and ensure they properly reflect the preceding text. My last four comments in the 'technical' section below reflect this.

The second relates to the consideration of climate in the study. Of course it is difficult to give full consideration to everything in such a short manuscript, but since you devote the second half of a long paragraph to specifically discussing the Karakoram climate, it should be mentioned somewhere that the climate in the west is very different to that in the east. It is after all the primary control on the spatial variability in mass change that you present. A few lines should sort it.

Technical comments:

P5858

Lines 18-23: these aims neglect a major point of the study - to evaluate the contribution of glacier mass loss to river discharge.

Line 24: 'by' should be before the (i).

P5860

Lines 2-5: as far as I'm aware there hasn't really been much support for the topographic or glaciological characteristics being the cause of the anomaly in the literature. On the other hand there have been rather more studies showing/citing climate as being the driving force, most of which you then go on to discuss. I'm thus not sure this statement reflects the debate very well.

Lines 5-7: This doesn't read very well - can you rephrase?

Line 7: You could (should?) split the paragraph starting at 'Direct', since this is now discussion related to your data, rather than your own results.

C2692

Line 8: missing 'are' between 'trends' and 'uncertain'.

Line 9: suggest, not suggests

P5861

Lines 5-6: Not sure I follow. How have the accumulation areas been lost? And how is this evidenced in the Landsat data?

P5862

Lines 10-11: should read 'As a consequence, SRTM glacier elevations do not, in general, reflect real mid-February 2000 glacier surface elevations...'

P5863

Line 5: 'is able to reconcile' can simply be 'reconciles' Line 15: 'is again able to completely reconcile' can just be 'again reconciles'

P5866

Lines 6-7: did you show this here (that firn lines have risen towards or above max glacier elevations?). You're probably right, but I'm not sure it's a conclusion of this study?

Lines 15-19: again, I'm sure you're right but did you show this here?

P5867

Lines 2-4: It's good that you're open about this, but are you suggesting your inference is not believable? In which case it rather undermines your previous discussion about it (in which there is no hint that you think it could be wrong).

Lines 9-16: Given this is a key conclusion, I see no obvious mention/discussion of it in the preceding text? I think you should at least mention it in Section 3.2. In fact, these lines read like a part of the discussion, rather than a conclusion.

C2693

Interactive comment on The Cryosphere Discuss., 8, 5857, 2014.

C2694