

Second review of – Thinning-induced glacier deceleration in the Zaskar Himalayas

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I reviewed a previous version of this article, and recommended it be published after suitable revision. Having carefully reviewed the changes based on all reviewer comments, I agree that this manuscript is now in good shape and close to publication. I have listed a few technical corrections below, mostly on the abstract and other key areas, and suggest the manuscript be published after a final round of these changes.

Title – The change is clearer although I think you want to make sure you clearly highlight how you infer causation between these and not just correlation in the abstract. It is currently clear from what you write that they both slowed and thinned, but not how the thinning ‘induced’ the slowdown.

L10 ‘but’ -> ‘and’ possibly

L11 ‘Remote sensing-based image correlation provides a tool for observing surface’ -> ‘Satellite image correlation enables observation of surface’

L15 ‘overall experienced deceleration at an average rate of -2.4 m year⁻¹ decade⁻¹ in this region’ – deceleration at a rate of -2.4 is somewhat ambiguous and could be interpreted as a speedup. Maybe remove the negative sign? Or ‘decelerate with an average change in speed of -2.4’

L16 Same as the comment above about elevation decrease of -0.21

L17-21 These last sentences of the abstract can be strengthened and would set the paper up better.

This sentence “While glacier mass loss, particularly through thinning, and associated reduction in driving stress was identified as the primary driver of velocity deceleration, glacier-specific characteristics, such as geometry, topography, debris cover and terminus type, also influenced glacier response.” would be better if connected with your evidence.

This last sentence “Overall, our results confirm loss of ice mass in this region, which generally corresponds with a reduction in surface velocity.” This seems to not quite highlight the key result here, and possibly be a little misleading (as this paper does not really ‘confirm’ ice mass loss). Perhaps it would be better to highlight the insight gained into glacier dynamics, something about the longer term trends, or other aspects that come directly from your data.

L185-190

I’d merge objectives 3 and 4 which cover the same thing. In fact, objective 2 is a rather small task that ties in with 3 so I might just break it down into (1) and merged (3&4).

L440 (Figure 2)

This figure is great and addition of the vectors provides much improved confidence in the results (and similarly for the Sup Mat figure that complements this). Overall the results here

look convincing. The areas where this breaks down provide you with some information that might be worth highlighting in the limitations/uncertainty section later. See a few places I've broken out in the screenshot below: 1 and 2 are upstream accumulation areas with vectors that are clearly wrong (sideways/upslope) – the data here is therefore not reliable. Same with 3 on smaller tributaries (likely snow covered/slow/few features to track). The fact that the vectors are reliably downstream and internally coherent for the main glacier trunks provides you something you can point at for the reliability of the data. I'll let you decide where best to highlight this, but it tends to be valuable to show for readers who are non-experts in the technique.

