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Interactive comment on “Revealing glacier flow and surge dynamics from animated satellite image sequences: examples from the Karakoram” by F. Paul

M. Sharp (Editor)

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Dear Frank We have three useful reviews all of which recommend that the paper be accepted following revision. I appreciate your detailed responses to the reviewer comments and am generally happy with the actions you propose, so I suggest that you go ahead and make them and then submit a revised manuscript. Given the nature of the suggested revisions I don't think that a further round of review will be required, so long as you do as you propose in your responses.

I would, however, make two general comments, the first of which I would like you to address in your revision.

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A recurrent issue in the reviewers' comments is the use of the term "surge" in the paper. It strikes me that we are learning, as multi-temporal remote sensing studies of glacier flow and glacier change proliferate, that variability in glacier flow rates can take many different forms. The reality is that things are much more complex than the 1970s notion that glaciers exhibit either steady slow flow, steady fast flow, or oscillatory flow with a defined and repeatable time scale. With this realization, the use of the term surge (in the Meier and Post sense) becomes problematic and potentially confusing unless authors very carefully define what they take to be a surge in a particular study. Unless this is done, the usage risks concealing more information than it reveals and that is not a positive thing. I would therefore encourage you to provide a clear statement of what characteristics/observed behaviours you use to define a surge in your study, and to explain what other forms of velocity variability you can identify in your imagery that do not fit the description of a surge (or alternatively identify a range of different types of surge if you think that is the appropriate approach). I think this would be a very useful exercise that could add scientific value to the paper and perhaps serve as a trigger for more extended discussion of an issue that is important but that we, as a community, have yet to confront directly.

The second comment is perhaps directed more at the Editor in Chief and Publisher. If TC goes ahead and publishes this paper, then a precedent will have been set for accepting video as supplementary material. The reviewers all suggest that your video could be presented in other ways that would make it more effective as a means of communicating your message. Your response is that you cannot follow the suggestions because of the journal's limit on the size of file that can be added as supplementary material. If your approach takes off, it will soon become clear that that limit is restricting a way in which people now want/need to communicate. There might therefore be some merit in an editorial level discussion about whether or not keeping that limit is viable in the long-term. Clearly, I don't expect you to respond to this thought within the manuscript.

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Interactive comment on The Cryosphere Discuss., 9, 2597, 2015.

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9, C1–C3, 2015

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