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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

Anonymous Referee #3

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The paper of F. Paul presents animated glacier flow time series for several Karakoram regions using imagery from the Landsat archive. The animations are great and useful on many levels, however, their presentation is not ideal. Currently, the main results are found in the supplementary materials, while much less important elements are found in the main paper. Some paragraphs contain details (how old is a certain image format, which button needs to be pressed in a certain program, etc.) that could go into an appendix or possibly into supplementary materials. Other paragraphs have a review character, and the corresponding content could often be shortened or removed. Overall, I think, the topic would be better served if the paper were boiled down and published in a short communications format. If the paper were published in the current format,

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it would be good to see additional quantitative aspects. For example, the discussion mentions characteristics of the surge-type glaciers identified (size, slope, etc). Having a more quantitative analysis of these parameters, similar to what has been done in previous work, would strengthen the paper. In any case, it would be great to see the fascinating movies hosted on a website.

P2598 L. 1: It seems that such movies (or at least “flicker” images) have been used regularly in presentations for visualization purposes, or just by the researcher themselves to get familiar with their study area. To my knowledge, however, there are no papers published that focus on this specific topic.

L. 11: Revealed should be reveal

L. 20 & following lines: The introduction, especially its first part, seems lengthy. For example, I am not sure whether the human brain or the time lapse camera paragraphs are required at all. Also consider removing sentence parts that are not required, such as “basically for everybody interested in seeing. . .”, “the very old (> 25 years)”, “but to my knowledge”, etc.

P 2599: L. 9: “in demonstrating what is going on” should be, for example, “in revealing the processes”

P 2600: L. 25: Consider replacing the word “laminar” with “steady” or something similar. The term laminar is at least confusing. Note that even non surge-type glaciers can vary their speed over time, so “steady” is not ideal, either.

P 2601: L. 6: “becoming” -> “become”

P 2602: L. 4: “and partly also”. Remove the “also”. Throughout the manuscript, consider removing all the filler words as well as informal words that are not required (e.g., “luckily” later on).

P 2603: L. 6: “come and go” -> disappear and reappear

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L. 8: “Leave an impact” -> “affect”

P 2604: L. 4: “collide with” -> “merge with”

L. 19-22: Needs to be read multiple times to be understood. Consider reformulating.

L. 22-24. Remove entirely.

P 2605:

L. 5: “Karakoram surge type”: I would refrain from adding additional types. Don’t your movies rather suggest that the idealized “surge-type” and “non-surge type” glaciers mark the two end-members of a continuum, with a multitude of types in between?

L. 26: delete “which restricts their use. . .

P 2606: L. 1: “but change their shape” -> “but their shape varies”

L. 13. “so high” -> “high enough” or “sufficiently high”

L. 15. Consider removing this section completely. If kept, replace “shaking” with a word that doesn’t automatically relate to earthquakes in this context. “wobbling” or simply “moving” could work.

P. 2609: L. 8: “more safe” -> “appropriate” or “advised”

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

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