

## ***Interactive comment on “Winter speed-up of quiescent surge-type glaciers in Yukon, Canada” by T. Abe and M. Furuya***

**Anonymous Referee #2**

Received and published: 9 July 2014

This short paper delivers a set of surface velocity time series data spanning 5 years. The spatial coverage is good, with data from 3 likely surging and 7 non-surging, surge type glaciers near the Alaska-Yukon border. This data set should find its way into publication, as it may offer some new insights into how surge behavior may be initiated and terminated as well as how the surging state differs from the quiescent phase behavior.

Unfortunately, I think the manuscript requires major revisions before it is ready for publication. Setting aside the writing, which currently makes the manuscript very challenging to read, the discussion and conclusions do not fit well with my understanding of surge type glaciers. The authors could do much more in terms of investigating their results in comparison to others, and providing better discussion of when and where the patterns of change they observe are consistent or different with what others have

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seen. I also think that too much emphasis is being placed on the description of the winter speed and subsequent down glacier propagation of the anomaly. This phenomena does not appear in all the data sets provided, and does not seem to be such a novel finding. Reviewer one has already done a good job of explaining this. Moreover, I would suggest the authors look more deeply into the critical transition period in the fall, and reevaluate accordingly.

I'm struggling to interpret the RGB composite intensity images. They all seem to be a little too conveniently homogeneous; as if the glacier is either entirely surging or entirely quiescent. Other data presented in the paper seems to be telling a more complex story. The authors should do a better job of explaining the significance of these data, and how the reader is to interpret them.

The figures are inconsistent, and some present outright puzzles to the viewer. This is especially true of figure 6, which I still can not understand the dates for. Also try and capitalize on other data in the figures. For example, place a colored (red?) border around frames where a surge is occurring. Consider providing similar clues to the reader for frames that contain mini-surges, or other phenomena discussed in the text.

The paper should be read aloud, several times, by a native English speaker, and the numerous problems might be corrected.

The data remain a potential asset to the community, but a fair amount of work must be done before they can be presented.

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Interactive comment on The Cryosphere Discuss., 8, 2611, 2014.

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