Dear authors,

I commend the authors for the considerable work carried out on the manuscript. It now reads extremely
well, and very few typos could be detected (see below in Detailed remarks). The manuscript's reorganization is also
excellent, with the right materials being pushed in the Supplementary section, to address some concerns of the reviewers.
I am therefore pushing this manuscript for publications pending minor review (Editor Review). The reason I am doing
this is to address the concerns from Reviewer #4, which were not included in the response to authors, and some concerns
that I still have on the manuscript. This should not imply substantial work on the part of the authors. You will find
below a detailed analysis of the response to authors, and what still needs some work.

Thank you again for your submission,

Best regards,

Eric Larour

General remarks:

Introduction: very fluid, and introduces the concepts succintly but very clearly. I agree this is much improved.

Data sets and Analysis method: the passage on uncertainty and error estimates is very useful, and is a good addition.

Observation results: this section is much more focused indeed, and the move to the Supplementary materials was indeed
judicious. It is now clear what the observation's main focus is for the manuscript, and what the message is.

Discussion: this section is much less speculative, and has been simplified very well, driving the message across
efficiently. The process presented here that could explain the winter speed-up is layed out with the necessary
precautions, without excluding other processes such as till deformation for example.

Concerns raised by all reviewers:
- you correctly address the issue over whether the presented dataset is an original contribution, by stressing
the fact that previous work is not extensive in terms of winter speed-up, which is the main contribution of your
manuscript.
- you also correctly reassessed whether the winter speed-up observations were real signals and could indeed be

compared to summer speeds. I believe you have done your due diligence on the dataset, and that the manuscript
is now ready to stand the scrutiny of further reads once published. The considerable rework on the citations
of previous work by Kamb, Raymond helped in this matter.
- considerable work was carried out on the citations, especially to address concerns from reviewer #3, and the
flow of the manuscript, and the correct interpretation of the work cited is now much more evident.
- in terms of vertical motion, I understand it was neglected, but if you have the velocity maps (in x,y axis),
using the divergence of the velocity, you can actually assess what isthe expected vertical velocity for a
steady-state regime. It would be nice to have such assessment in order to verify that your assumptions on the
approximation are valid. A small section on this would be important I believe.

Concerns that need to be addressed regarding review #4: apart from the detailed remarks regarding the manuscript,
which will need to be addressed before this is pushed for final publication, I would like to following concern
addressed thoroughly:
- how is the seasonal cycle of a glacier different from potential mini-surges that are here probably captured in the
velocity signal.
- how can a glacier classified as quiescent be flowing at 200 m/yr.

In terms of PDD analysis, I don't believe this to be critical. If the authors would like to carry out such analysis
to understand how melt-water from one season can be a trigger for the fast winter flow, I will understand, but I don't see
it here as a requisite for publication.

Figures: the figures are very good quality, except maybe for Fig. 2 which has in my opinion too many frames. I would
make it a 5x4 array instead of a 8x4 array. It would not take away from the main message of the manuscript, and would
allow for a better assessment of the speed-ups in Winter.

Detailed remarks:

p3. l14: "the St. Elias Mountains"
p3. l15: due to global warming
p7. l30: reaching a maximum
p9. l12: at the ice-till interface