Editor comment on "Processing methodology for the ITS_LIVE Sentinel-1 ice velocity product" by Yang Lei et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-393-EC1, 2022

Dear Authors,

In addition to the two reviewer comments, I have the following observations, suggestions, comments, and questions.

The current version only validates against other Sentinel SAR imagery. I think it would strengthen the data description to take some outputs and compare against one of the many already existing velocity products. See Sect. 3.5 of https://essd.copernicus.org/articles/10/2275/2018/ I suggest validating against one or more of the many other MEaSUREs (or PROMICE) velocity products in Greenland, and other velocity products in Antarctica and in alpine regions. Why should I use this instead of the many other MEasUREs or PROMICE products? How does it compare to them? What are the causes of the disagreements, assuming they exist? Are the errors random or systematic bias?

All errors appear internal to your processing scheme. Are there other errors that impact the final data product? See Sect. 3.6 of above URL.

Given ITS_LIVE claim of global, only 3 validation regions in Greenland is limiting. Antarctica and especially small Mountain Glaciers are fundamentally different creatures - are the results and errors the same in those locations? I think an in-depth discussion of your data product and its quality issues is needed for mountain glaciers and Antarctica. Reviewer 1 suggests that the paper title could be changed to reflect "polar regions", but I disagree. The dataset is global, so this data description paper must cover the data, and cannot focus on just a subset of the data.

A more detailed description of the data product is needed. For example, how many images are there? How many have 6 day resolution, and how many have 60 day resolution? Are there differences between A and B? Which should I use for my (insert common use case scenario here)? Regarding the Greene et al (2020) paper, how does that impact the 6 vs 60 day w.r.t. under/over sampling highs/lows? By "large glacierized regions" are you really "global" or do you exclude small mountain glaciers? What criteria defines your cutoff?
Ken Mankoff
Editor