

## Review of Zhang et al.

I'm satisfied with the response provided by the authors and I think that the manuscript has clearly been improved. There is now a good discussion of the strengths and limitations of this new dataset, which I think will be greatly appreciated by future users. The metadata have also been corrected. I made a few minor comments below (the line numbers refer to the line numbers of the track-changed manuscript):

**L12:** Please state concisely what 'The sophisticated corrections' consist of here. This is too vague for an abstract.

**L124-127:** You need to justify your choice of retracker here. You spend some time in the introduction (L56-61) to mention three different techniques to mitigate the effects of radar penetration so I think it would be nice to reflect on that and state what method you chose and why.

**L162:** Do you have enough data within a 2 km grid cell to constrain the least-square fit during the ERS-1/2 missions?

**L163:** What ice sheet mask/delineations are you using? Please specify here whether you're using Rignot's, Zwally's definition or something else.

**L178:** I would add 'at least 100 elevation anomalies in the 216 months of the 2003-2020 period are retained' for clarity

**L191:** 'and then add them back to the EOF reconstruction results' instead of 'return them'

**L199:** 'can be calculated'

**L267:** 'The ice velocity'

**L277-279:** I suggest moving this sentence at the end of section 2.4 as it belongs more to the methodology than the results section.

**L398:** 'even when applying'

**L399:** I would be more specific 'a small residual signal caused by the 2012 melt event and manifesting as a surface elevation increase signal is found in the merged time-series'. Can you quantify this elevation step in your time-series to give the user an indication of how small the signal is? You could calculate the elevation difference before/after summer 2012 for the ice sheet as a metric.