

Interactive comment on “Seasonal velocities of eight major marine-terminating outlet glaciers of the Greenland ice sheet from continuous in situ GPS instruments” by A. P. Ahlstrøm et al.

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The authors present a very important and useful data set. Their description of its derivation and presentation of independent quality control will give users of the data assurance that it is reliable.

My main concern is that the authors present all their errors in terms of percentages. I do not see how errors in GPS or in InSAR can scale with velocity and hence this is a strange, and possibly misleading, presentation of the velocity uncertainties. I strongly recommend they express them in terms of m/yr.

Further, the actual data at the doi require some header records to explain the units and

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all the columns in full.

minor comments: P29L7: swap radar and satellite

P30L15-17: can the mass budget approach yield this improvement or does it rather rely on it? L18: change application to increased accuracy? L24: give at the end of the sentence a typical range of X-Y weeks

P32L9: King et al 2002 is not peer reviewed and a better replacement should be found L13: multi-path is conventionally multipath in GPS L18: do you mean every one-third?

P33L2: I wasn't clear why gaps would increase the s.d. given this is before any temporal averaging L5: I wasn't clear if the Press reference referred to the original method or the modified one. If the original, then information is lacking on what the modification does L9: both "is" should be "are" L24: use of "waves" is unclear at this point

P34L21: move derived to before GPS

P35 data set 3: I wasn't clear how frequent these were available, typically.

P36L5 onwards - you say you refer to the datasets as GEUS and APL but then do not in this section L23: again, I don't think SAR velocity errors scale with speed so not to be expressed as %

P37L5: this examination is not shown anywhere I could see. L21: "shorter or longer time span."

P38L7: make it clear you are talking about SAR when discussing resolution and time span

Table 1: please add coordinates for all sites Figure 1: scale bars and fonts are too small Figure 3: state if the date is the mid-point or something else

Figure 11 caption: slope depending effects are not discussed in the main text and need something there to explain them. The green point is a massive outlier at 200m/yr so

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this needs a little bit of discussion in the main text. The comment on the black point belongs in the main text.

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