

The authors present new elevation data collected using kinematic GPS in Antarctica and discuss their relevance toward validation of satellite laser altimetry data from the ICESat-2 mission. The paper was concise and well-written, and I am happy with publication almost as-is.

I have three major comments:

- (1) While the authors discussed elevation changes associated with sastrugi migration, there was no discussion of other surface processes, primarily firn compaction in the context of
 - (a) Temporary (perhaps elastic) compaction of snow/firn from the weight of the PistenBully, which might not be captured from the track depth measurements. How heavy were the PistenBullys and is this effect negligible?
 - (b) Climate-driven firn compaction over < seasonal to multi-year timescales showing up as elevation differences between GPS- and Operation IceBridge-derived estimates. I think it could be useful if the authors included a time series of modelled elevation change from firn processes (data available at <http://www.staff.science.uu.nl/~ligte104/DATA/>) at one or more locations along this transect.
- (2) The authors mentioned that there were anomalous elevations at the edge of the UAF lidar swath. This raised a red flag for me: Is there a possible connection between scan angle and elevation accuracy for the airborne lidar systems (even in campaigns where elevations did not have an across-track tilt)? The authors could include elevation differences between GPS and airborne lidar as a function of scan angle, especially since their data will likely capture a fairly wide range of scan angles. This analysis will tell us if we should only use airborne lidar data from a particular range of scan angles when comparing with ICESat-2 altimetry.
- (3) It appears to me that the UAF lidar data from 3rd December 2017 were of lower quality than those from 30th November 2017 (Table 1, 2, and Figure 6 Panel C). However, biases appear to be within 1σ uncertainties, so perhaps this difference isn't significant enough to require further discussion.

Other minor comments:

- 1) Page 1, Line 20: change "set to launch" to "launched". Yay!
- 2) Section 3.1: What cut-off angle was used in the processing?
- 3) It would be nice to have larger font sizes in Figures 6 and 7.

Discussion: I think a significant number of issues with using GPS data to validate airborne and satellite altimetry could potentially be mitigated in the future with the use of a terrestrial laser scanner (TLS) mounted near the GPS antenna on the PistenBullys.