

The Cryosphere Discuss., community comment CC1
<https://doi.org/10.5194/tc-2021-181-CC1>, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on tc-2021-181

Andrew Shepherd

Community comment on "Brief communication: Preliminary ICESat-2 (Ice, Cloud and land Elevation Satellite-2) measurements of outlet glaciers reveal heterogeneous patterns of seasonal dynamic thickness change" by Christian J. Taubenberger et al., The Cryosphere Discuss., <https://doi.org/10.5194/tc-2021-181-CC1>, 2021

I'm puzzled by some of the wording used in this discussion paper - including the title and the abstract. Seasonal variations in the thickness of the Greenland ice sheet have been reported on very many occasions based on observations from different satellite altimeters, so this paper is not the first to do this (e.g McMillan et al. (2016), Sutterley et al. (2018), and Gray et al., (2019)). And ICESat-2 certainly does not provide "the first space-based, seasonally repeating altimetry measurements of the ice sheets"; those were provided by ERS-1 (almost all of Greenland) and CryoSat-2 (all of Greenland).

McMillan, M., et al. (2016), A high-resolution record of Greenland mass balance, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL069666.

Sutterley, T. C., Velicogna, I., Fettweis, X., Rignot, E., Noel, B., & van den Broeke, M. R. (2018). Evaluation of reconstructions of snow/ice melt in Greenland by regional atmospheric climate models using laser altimetry data. *Geophysical Research Letters*, 45, 8324–8333. <https://doi.org/10.1029/2018GL078645>

Gray, L., Burgess, D., Copland, L., Langley, K., Gogineni, P., Paden, J., . . . Smith, B. (2019). Measuring height change around the periphery of the greenland ice sheet with radar altimetry. *Frontiers in Earth Science*, 7 doi:10.3389/feart.2019.00146