

The Cryosphere Discuss., author comment AC1 https://doi.org/10.5194/tc-2022-39-AC1, 2022 © Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on tc-2022-39

Alek A. Petty et al.

Author comment on "Winter Arctic sea ice thickness from ICESat-2: upgrades to freeboard and snow loading estimates and an assessment of the first three winters of data collection" by Alek A. Petty et al., The Cryosphere Discuss., https://doi.org/10.5194/tc-2022-39-AC1, 2022

We would like to note that after submission of our preprint, a paper that analyzed at threee years of winter Arctic thickness with ICESat-2 but using CryoSat-2 radar freebaord measurements to infer snow depth was published in GRL:

https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021GL097448. A different approach to our method of using a snow accumulation model to constrain the time-varying snow depth (and density too in our case).

Our preliminary analysis has indiciated a very high degree of agreement between those estimates and the final rel005, gridded monthly mean results reported in our study in terms of mean snow depth, thickness and the \sim 50 cm multiyear ice thinning.

We expect to add a note on this to the revised manuscript.

Alek Petty