

We are satisfied with the revisions. I strongly agree with the reviewer's assessment of this article that it is very meaningful to derive a new Greenland DEM from ICESAT-2. I am pleased to inform that the paper is now can be accepted for publication with some minor revisions as follows:

We thank you for the helpful feedback, these suggestions have significantly improved the text and figures, we are appreciative of your help and time.

1. P10, in the part of “Date availability”: “National Tibetan Plateau Data Center, ...” should be changed to “National Tibetan Plateau/Third Pole Environment Data Center, ...”. A detailed description of the data center can be found in this article: Li X, Che T, Li XW, Wang L, Duan AM, Shangguan DH, Pan XD, Fang M, Bao Q. CASEarth Poles: Big data for the Three Poles. Bulletin of the American Meteorological Society, 2020, 101(9): E1475-E1491, 10.1175/BAMS-D-19-0280.1.

Responses: Accept and revised.

2. In the Part “5. Comparison with other available DEMs”: The results show that the accuracy of ICESat-2 DEM is comparable to the 500 m ArcticDEM (Table 5 and 6), however the comparison is done at different time periods and the grid number is different. Since both data are available for the year 2018, can you do a comparison of these two data using the same grid number for the same time period? I think the results of this comparison can better illustrate the advantages of the new data.

Responses: Accept and revised. We did a comparison of 500 m ArcticDEM and ICESat-2 DEM by using IceBridge data of year 2018. The same conclusion can be drawn that ICESat-2 DEM is comparable to the 500 m ArcticDEM. The results are as follows.

Table 7: Elevation differences of the ICESat-2 DEM and 500m ArcticDEM with respect to IceBridge data in the entire Greenland and stable regions which have little elevation change rate.

Region	DEM (grid numbers)	MED (m)	MD (m)	MAD (m)	STD (m)	RMSE (m)	R
Entire Greenland	ICESat-2 DEM (90141)	-0.24	-0.59	3.21	12.22	12.24	0.9999
	500m ArcticDEM (90141)	0.49	1.52	2.07	8.11	8.25	0.9999
Stable regions	ICESat-2 DEM (22937)	-0.11	-0.20	1.31	6.15	6.16	0.9999
	500m ArcticDEM (22937)	-0.19	-0.05	0.86	2.52	2.52	0.9999