Supporting Information for “Improved GNSS-R bi-static altimetry and independent DEMs of Greenland and Antarctica from TechDemoSat-1”

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Table S1: Difference from Slater et al. [2018] DEM (top, Antarctic) and ESA CCI DEM (below, Greenland) shown in metres at different slope ranges. TechDemoSat-1 data produced according to methods in paper.

| Slope Range (degrees) | Median difference (m) | Mean difference (m) | RMS difference (m) | % of total samples |
|-----------------------|-----------------------|---------------------|--------------------|-------------------|
| Antarctic              |                       |                     |                    |                   |
| 0.00-0.25             | 8.35                  | 8.12                | 36.90              | 55.52             |
| 0.25-0.50             | 10.26                 | 9.17                | 43.42              | 23.02             |
| 0.50-0.75             | 16.64                 | 18.22               | 58.71              | 9.30              |
| 0.75-1.00             | 19.19                 | 24.95               | 76.00              | 4.24              |
| >1.00                 | -27.96                | 14.38               | 176.34             | 7.92              |
| Greenland             |                       |                     |                    |                   |
| 0.00-0.25             | 9.26                  | 9.22                | 30.07              | 66.83             |
| 0.25-0.50             | 30.93                 | 34.91               | 66.45              | 11.43             |
| 0.50-0.75             | 39.32                 | 41.15               | 102.35             | 3.20              |
| 0.75-1.00             | 38.87                 | 28.77               | 131.29             | 2.00              |
| >1.00                 | -92.98                | -190.10             | 391.28             | 16.54             |

Slater, T., A. Shepherd, M. McMillan, A. Muir, L. Gilbert, A. E. Hogg, H. Konrad, and T. Parrinello (2018). A new digital elevation model of Antarctica derived from CryoSat-2 altimetry, *The Cryosphere, 12*(4), 1551-1562, doi:10.5194/tc-12-1551-2018.