



Programme for Monitoring of the Greenland Ice Sheet (PROMICE)

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Initiated in 2007, the Programme for Monitoring of the Greenland ice sheet (PROMICE) is an ongoing effort to monitor changes in the mass budget of the Greenland ice sheet. PROMICE is operated by the Geological Survey of Denmark and Greenland (GEUS) in collaboration with the National Space Institute (DTU Space) and the Greenland Survey (Asiaq). PROMICE focus on observing key variables for:

- 1) Determining the Greenland ice sheet surface mass balance. We make use of a network of 22 automatic weather stations observing meteorology and ablation/accumulation. PROMICE are supplementing regional climate modeling by providing daily albedo grids from MODIS. PROMICE also tests the performance of regional climate models by in-situ surface mass balance observations and ice-sheet meltwater discharge monitoring.
- 2) Determining the Greenland ice sheet dynamic mass loss. We calculate ice movement towards the oceans through fluxgates around the PROMICE perimeter. The introduction of data from Sentinel-1 for ice velocity, IceBridge BedMachine Greenland for bed topography, and the Greenland Ice sheet Mapping Project for digital elevation, we can now estimate iceberg flux at over 400 individual tidewater glaciers around the ice sheet.
- 3) Mapping Greenland ice area change. We rely on Landsat 8 and Sentinel-2 imagery to continue to track changes in the extent of the ice sheet and surrounding individual glaciers.

PROMICE remains committed to maintaining a well-documented database for storing and disseminating Greenland glaciological and meteorological data free of charge. See www.promice.dk for more information.