



Project acronym: SNOWFALL

Project title: Snow Falling on Arctic Lakes

Project leader: Hamish Pritchard, British Antarctic Survey, United Kingdom

Discipline: Earth Sciences & Environment: Global change & Climate observation

Station(s): Tarfala Research Station (Sweden), Sermilik Research Station (Greenland/Denmark)

This project will test a new, autonomous snowfall observing method at three INTERACT Arctic sites: Tarfala (Sweden), Sermilik (Greenland) and Toolik (Alaska). We will temporarily place simple pressure sensors into lakes in Sweden and Greenland (Toolik already has such a sensor), and use these pressure signals to measure directly the hourly falling Snow Water Equivalent onto the lake surfaces, areas that cover millions of square metres. We will use these large-area, high-frequency winter precipitation observations to test for and seek to understand biases in operational weather forecasting models. This will lead to better data on and greater predictability of this key but highly uncertain physical parameter that governs ice sheet and glacier mass balance, and is a key control on the rate of sea level rise and on mountain water resources.