

Introduction to info sheets on land-based observations

The observing capacity of terrestrial observing stations has been strengthened in Greenland, Alaska, Canada, Northern Finland, and Siberia. The quality and number of observed parameters have increased and their data management (storage, access, interoperability) have improved. Novel technical solutions were applied to increase the instrumental resilience to Arctic weather conditions and the automatization, thus enhancing temporal resolution and reducing the costs associated to human-operations. The developed instrumentation was operated from stations on the ground, including ice sheets and glaciers, as well as from platforms such as aircraft, helicopters and drones, enabling data collection on different spatial scales. The most extensive collection of in situ data takes place at supersites, which are larger stations with many advanced instruments. Supersites provide long time series for climate monitoring and ground truth for validation/calibration of satellite-based data and model development.