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The Norwegian permafrost database (NORPERM)

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According to the IPY data policy, all data from IPY-projects should be stored in international data repositories ensuring long-term preservation and sustained access. Also, the increasing amount of ground temperature data in Norway and Svalbard collected as part of different projects needs to be managed and stored centrally in a standard format database. The Geological Survey of Norway (NGU) is the managing institution for geological data in Norway, and therefore naturally the institution to host a Norwegian permafrost database. The Norwegian permafrost database, NORPERM, is developed at NGU as part of the IPY-project 'Permafrost Observatory Project: A Contribution to the Thermal State of Permafrost in Norway and Svalbard' (TSP Norway). NORPERM will be the important data legacy from this project.

There are two main permafrost observatories in TSP Norway; the North Scandinavian Permafrost Observatory and the Svalbard Nordenskiöld Land Permafrost Observatory. Ten and twelve boreholes have been drilled and instrumented in the two observatories, respectively, for long-term thermal monitoring. The depth of the boreholes ranges from 4 m to 38 m. All the boreholes in Svalbard are drilled in relatively warm permafrost, while most of the boreholes in the North Scandinavian Permafrost Observatory are located on or very close to the lower border to the permafrost zone, existing mainly in the highlands. In addition, 184 miniloggers measure shallow ground temperatures. These data are currently being imported into the database. The database is also designed to include photographs from the measurement locations. Data will be quality checked by TSP project scientists, to ensure data quality. Three permafrost boreholes have online data transfer, enabling continuous observations of the permafrost thermal state for research and education.

The metadata follows the international standard format provided by the International Global Terrestrial Network of Permafrost (GTN-P). An export-routine from NORPERM to GTN-P has been made for efficient data reporting. The public user interface is still under development. At present a pilot version for the North Scandinavian Permafrost Observatory exists. NORPERM will soon be accessible through the websites of TSP NORWAY (www.tspnorway.com) and NGU (www.ngu.no). The public interface builds on web map service (WMS) technology, enabling visualization on topographical and geological maps. Relevant geographical, meteorological, geological and geophysical data in map format, acquired by other institutions and available through Norway Digital (a national public co-operation of digital data between Norwegian national institutions), will be linked to the database. Downloaded data will be available in standard format as 'facts sheets' containing metadata and links to photographs, graphical plots and the data spreadsheets.

NORPERM is also the database of the PYRN-TSP Nordic project. PYRN-TSP Nordic is a project providing young Nordic researchers with basic experience in drilling and thermal monitoring of permafrost. The project has in this way to goals; to involve young Nordic researchers in ongoing permafrost research and to add to the information on the thermal state of permafrost recorded by the TSP project. PYRN-TSP participants have drilled one hole in northern Finland, five in northern Sweden, one in northern Norway and two in Svalbard.