

# ESA GLOBSNOW – GLOBAL SNOW DATABASE FOR CLIMATE RESEARCH

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The European Space Agency (ESA) funded GlobSnow project aims at creating a global database of snow parameters for climate research purposes. The main objective is to create a fundamental climate data record (FCDR) concerning the essential climate variables (ECV) for snow. Two snow products will be created: one concerning the areal extent of snow (SE) the other measuring the snow water equivalent (SWE). Both products will include the actual observed satellite datasets (the FCDRs) and the geophysical parameters (the end products) derived from the satellite data along with accuracy information for the each snow parameter. The temporal span of the snow products will range between 15 to 30 years. A key improvement of the snow products, when compared with the currently available data sets, will be a thorough validation of their accuracy with respect to spatially and temporally extensive ground truth data sets.

In addition to the snow FCDRs and end-products, an operational near-real time (NRT) snow information service will be implemented. The service will provide daily snow maps for hydrological, meteorological, and climate research purposes. The snow products will be based on data acquired from active and passive, optical and microwave-based spaceborne sensors combined with ground-based weather station observations. The project was started in November 2008, and is being coordinated by the Finnish Meteorological Institute (FMI). Other project partners involved are NR (Norsk Regnesentral), ENVEO IT GmbH, GAMMA Remote Sensing AG, Finnish Environment Institute (SYKE) and ENVIRONMENT CANADA (EC).

The GlobSnow-project aims at creating temporally and spatially extensive snow products with well known accuracy characteristics. The snow products will be based on the state-of-the-art algorithms that are thoroughly validated using an extensive ground truth database gathered from Canada, Scandinavia, Russia and the Alps. The snow products will be generated on a daily, weekly and monthly basis for both SWE and weekly and monthly for SE. Both the historical data sets and the operational products will be made available through the GlobSnow web-based archive.

First algorithm evaluation results for both SWE and SE have been acquired and the selection of the GlobSnow algorithm for SWE has been made. For SE the decision is foreseen to be made during September 2009.

Additional information can be found on the GlobSnow-website: <http://globsnow.fmi.fi>