



Circumpolar freeze/thaw surface status and surface soil moisture from Metop ASCAT

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Circumpolar surface soil moisture and freeze/thaw surface status has been derived from Metop ASCAT within the framework of the ESA DUE Permafrost and STSE ALANIS-Methane projects. The dataset is available via Pangaea (doi:10.1594/PANGAEA.775959) and can be visualized with the WebGIS of the DUE Permafrost data portal (www.ipf.tuwien.ac.at/permafrost). MetOp ASCAT data have been used for both the near surface soil moisture (SSM) product and determination of freeze/thaw status at panboreal/ arctic scale. Metop-A, launched in October 2006 by the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), is the first of three satellites within EUMETSAT's Polar System (EPS).

The ASCAT SSM DUE Permafrost product is the result of an improved SSM retrieval algorithm developed at the Institute for Photogrammetry and Remote Sensing (IPF) of the Vienna University of Technology.

The SSM Product is delivered with a weekly temporal resolution and 25 km spatial resolution. The soil moisture product also includes a quality flag which contains the number of used measurements. Data are masked for frozen ground conditions also based on MetOp ASCAT. The daily SSF is available as separate flag.

The SSM product is provided as weekly averaged images north of 50°N in GeoTIFF/NetCDF format and EASE Grid projection. Further, complementary regional scale (1km) freeze/thaw information is available at selected sites based on ENVISAT ASAR GM (PANGAEA <http://doi.pangaea.de/10.1594/PANGAEA.779658>).