A Satellite Data Based Information System for Permafrost Monitoring - The ESA DUE Permafrost Project

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The European space Agencies (ESA) DUE Permafrost project (2009-2011) is developing a suite of parameters indicative of the subsurface phenomenon permafrost using satellite remote sensing: Land Surface Temperature (LST), Surface Soil Moisture (SSM), Surface Frozen and Thawed State (Freeze/Thaw), Terrain, Land Cover (LC), and Surface Water (SW). The monitoring service is established based on mostly already existing Earth Observation datasets. Global to regional products are adapted, improved and validated with respect to the specific requirements of permafrost related research. Snow parameters (Snow Extent and Snow Water Equivalent) are being developed through a further DUE project called 'GlobSnow'. The final DUE Permafrost remote sensing products cover the years 2007 to 2011 at multiple scales. The dataset is released in early 2012.

From the beginning scientific stakeholders and the International Permafrost Association (IPA) were involved in the science and implementation plan. Inter-active international user workshops took place in 2010 at the Technical University of Vienna, in Vienna (AU), and 2011 at the International Arctic Research Centre (IARC) in Fairbanks, Alaska (US). The 3rd and final user workshop is hosted by the Alfred Wegener Institute of Polar and Marine Research, Potsdam, 15th – 17th in February 2012.

This presentation summarizes the achievements within the DUE Permafrost project, reports feedback collected at the open project workshops, presents the design of the information system and discusses future perspectives.

http://due.esrin.esa.int/prjs/prjs116.php
http://www.ipf.tuwien.ac.at/permafrost