Data collections of ESA DUE GlobPermafrost and ESA CCI+ Permafrost

Annett Bartsch and the ESA DUE GlobPermafrost and ESA CCI+ Permafrost Teams*
1b.geos, Korneuburg, Austria (annett.bartsch@bgeos.com)
2Austrian Polar Research Institute, Vienna, Austria
*A full list of authors appears at the end of the abstract

A Permafrost Information System (PerSys) based on satellite data has been setup as part of the ESA DUE GlobPermafrost project (2016-2019, www.globpermafrost.info). This includes a data catalogue as well as a WebGIS, both linked to the Pangaea repository for easy data access.

The thematic products available include InSAR-based land surface deformation maps, rock glacier velocity fields, spatially distributed permafrost model outputs, land surface properties and changes, and ground-fast lake ice. Extended permafrost modelling (time series) is implemented in the new ESA CCI+ Permafrost project (2018-2021, http://cci.esa.int/Permafrost), which will provide the key for our understanding of the changes of surface features over time. Special emphasis in CCI+ Permafrost is on the evaluation and development of land surface models to gain better understanding of the impact of climate change on permafrost and land-atmosphere exchange. Additional focus will be on documentation of kinematics from rock glaciers in several mountain regions across the world supporting the International Permafrost Association (IPA) action group ‘rock glacier kinematics as an essential climate variable’.

We will present the Permafrost Information System including the time series (2003-2017) of the first version of ground temperatures and active layer thickness for the entire Arctic from the ESA CCI+ Permafrost project. Further on, details on the user requirements collection process will be provided. Ground temperature is calculated for 0, 1m, 2m, 5m, and 10 m depth and has been assessed based on a range of borehole data. A survey regarding data repositories containing for validation relevant borehole data has been conducted. The records have been evaluated for the project purpose and harmonized. The resulting database will be eventually also made publicly available.

ESA DUE GlobPermafrost and ESA CCI+ Permafrost Teams:
Annett Bartsch, Guido Grosse, Sebastian Westermann, Tazio Strozzi, Claude Duguay, Frank Martin Seifert, Jaroslav Obu, Andreas Kääb, Ingmar Nitze, Birgit Heim, Antonie Haas, Sebastian Laboor, Barbara Widhalm, Angelika Höfler, Andreas Wiesmann, Sina Muster, Gustaf Hugelius, Reynald...
Delaloye, Heidrun Matthes, Chloe Barboux, Anna Irrgang, Christine Kroisleitner, Cecile Pellet, Urs Wegmüller, Mareike Wieczorek, Aldo Bertone, Alexandru Onaca, Florina Ardelean, Valentin Poncos, Line Rouyet, Hanne Christiansen
