

Name of research institute or organization:

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**Department of Geography, University of Zurich**

Title of project:

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Permos

Project leader and team:

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Dr. Stephan Gruber, project leader  
Dr. Jeannette Noetzli, lead PERMOS  
Dr. Christin Hilbich, postdoc  
Lorenz Boeckli, PhD student

Project description:

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The Swiss Permafrost Monitoring PERMOS operates a number of measurement sites around Jungfrauoch that are serviced once or twice per year.

The aim of the Swiss Permafrost Monitoring Network (PERMOS) is the systematic long-term documentation of state and changes of mountain permafrost in the Swiss Alps. The observation strategy of the PERMOS network has been established based on the experiences of its first ten years of operation, during which it transformed from a loose network of sites from research projects to an operational monitoring service. Based on the strategy and experiences, measurement sites, key variables and observation techniques were selected and are continuously evaluated.

The distribution and thermal conditions of mountain permafrost are spatially highly variable and mainly influenced by topography as well as surface and subsurface characteristics of different landforms. PERMOS includes three types of observations which are taken at sites on different landforms in varying topographic settings: (1) ground temperatures measured in boreholes and at the surface (in the case of Jungfrauoch and surroundings) near to the drill site, (2) changes in subsurface ice and unfrozen water content at the drill sites by geo-electrical surveys, and (3) velocities of permafrost creep determined by geodetic surveys and photogrammetry. In addition, fast mass movements from permafrost areas (e.g., rock fall) are documented in an inventory.

Key words:

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Permafrost monitoring

Internet data bases:

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[www.permos.ch](http://www.permos.ch)

Scientific publications and public outreach 2011:

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**Scientific communications (Poster)**

Schnee, Gletscher und Permafrost 2009/2010 (Snow, Glaciers and Permafrost 2009/2010), Die Alpen/Les Alpes, 7/2011.

PERMOS 2010. Permafrost in Switzerland 2006/2007 and 2007/2008. Noetzli, J. and Vonder Muehll, D. (eds.), Glaciological Report (Permafrost) No. 8/9 of the Cryospheric Commission of the Swiss Academy of Sciences, 68 pp. (report appears every two years, only)

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