

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. Jeannette Noetzli, lead PERMOS, project leader, Dr. Stephan Gruber, project collaborator

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 the 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 near to the drill site (as it is the case in the steep rock faces at Jungfrauoch and surroundings), (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 2013:

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**Data books and reports**

PERMOS 2013. Permafrost in Switzerland 2008/2009 and 2009/2010, Noetzli J. (ed.), Glaciological Report (Permafrost) No. 10/11 of the Cryospheric Commission of the Swiss Academy of Sciences, 80p.

**Magazines and Newspapers articles**

Schnee, Gletscher und Permafrost 2011/2012 (Snow, Glaciers and Permafrost 2011/2012), Die Alpen/Les Alpes, 7/2013, 52-59, 2013.

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