

Name of research institute or organization:

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**Department of Geography, University of Zurich**

Title of project:

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Swiss Permafrost Monitoring Network PERMOS

Part of this programme:

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PERMOS

Project leader and team:

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Dr. Jeannette Nötzli, lead PERMOS, project leader

Dr. Joel Fiddes, project collaborator

Dr. Ingo Völksch, project collaborator

Project description:

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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. PERMOS includes three types of observations which are taken at sites on different landforms in varying topographic settings in order to deliver a comprehensive picture of permafrost conditions:

- (1) Ground temperatures measured in boreholes, which are complemented by near-surface temperature measurements at locations around the site in order to capture the influence of the differing surface cover types and topographic settings, as well as the spatial variability of the changes.
- (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.

Due to its high elevation, the steep topography as well as the accessibility, the Jungfrauoch site is one of the key sites for rock temperature measurements in the network. Near-surface temperatures in near-vertical rock have been continuously measured at five locations with different aspects since 2001. The sites are operated by the University of Zurich and typically served once per year. A maintenance mission was undertaken in autumn 2014.

In addition, the two boreholes in the Jungfrau East Ridge, operated by the WSL Institute for Snow and Avalanche Research SLF, are also part of the PERMOS Network.

Key words:

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Permafrost monitoring, rock temperatures

Internet data bases:

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

Collaborating partners/networks:

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WSL Institute for Snow and Avalanche Research SLF

ETH Zürich, PermaSense Project

Scientific publications and public outreach 2014:

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**Data books and reports**

Schnee, Gletscher und Permafrost 2012/2013 (Snow, Glaciers and Permafrost 2012/2013), Die Alpen/Les Alpes, 7/2014, 2014.

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