



**permanet**  
Permafrost Monitoring Network

# **PermaNET**

## **Permafrost Long-term Monitoring Network**

### **Final Conference**



**2nd Circular**

**June 28, 2011 – July 1, 2011**  
**Centre de Congrès, Chamonix Mont-Blanc, France**

## ***The PermaNET project***

Permafrost is highly sensitive to climatic changes. Permafrost degradation and related natural hazards affect traffic routes, tourism areas, settlements and infrastructures. The main problem is a lacking strategy for the consideration of these newly observed specific impacts of climate change in risk prevention and territorial development. With the joint development of a common strategy for dealing with permafrost and related hazards under changing climatic conditions and the creation of an Alpine-wide monitoring network the project aims at preventing natural hazards, at contributing to sustainable territorial development and at the implementation of good governance practices.

Results of the PermaNET project are

- an Alpine-wide permafrost monitoring network,
- a permafrost map for the entire Alpine Space
- guidelines for the consideration of permafrost in natural hazard and risk management
- guidelines for the consideration of permafrost in water resources management.

These results will be presented at the final project conference.

### **The Alpine Space permafrost monitoring network**

PermaNET collected metadata of the most important permafrost monitoring sites and compiled it into a standardized permafrost monitoring network. On key monitoring sites, new monitoring stations have been installed and instrumented.

PermaNET provides recommendations for policy-makers for building up national monitoring networks on national and regional scale and a handbook for the installation and maintenance of an Alpine-wide permafrost monitoring network with standards for data acquisition.

### **Alpine Space permafrost map**

PermaNET collected and compiled permafrost evidences into an inventory of permafrost evidences and elaborated an Alpine-wide map of the permafrost distribution.

### **Guidelines and recommendations**

PermaNET provides a state-of-the-art report about the effects of climatic changes to permafrost and related natural hazards, a SWOT analysis regarding the opportunities and limitations of the tested approaches for detection and monitoring of slope movements in permafrost areas, recommendations for the consideration of the effects of climate changes to permafrost and resulting natural hazards and recommendations for the consideration of permafrost in drinking water resources management

## **PermaNET project Final Conference**

The final conference of the *PermaNET* project will be held in Chamonix (France) on Tuesday 28<sup>th</sup>, Wednesday 29<sup>th</sup>, Thursday 30<sup>th</sup> of June 2011, and Friday 1<sup>st</sup> of July 2011.

**28<sup>th</sup> of June, 9:00-10:30:** Internal *PermaNET* partner meeting.

**28<sup>th</sup> of June, 11:00-12:00:** Press conference.

**28<sup>th</sup> of June, 14:00-18:00:** Workshop on methods for movement (photogrammetry, terrestrial & air-borne laserscanning, inSAR, speckl & texture tracking) and thermal (rock sensors, electrical resistivity tomography, thermography) monitoring in permafrost environment.

**29<sup>th</sup> of June, 8:00-12:00:** Field trip to the Aiguille du Midi, 3842 m a.s.l. (by cable car).

**29<sup>th</sup> of June, 14:00-17:00:** Presentation of *PermaNET* results to scientific community, risk managers and stakeholders in natural hazard and water resources management.

**29<sup>th</sup> of June, 17:00-18:00:** Poster session about *PermaNET* results and project fair

**29<sup>th</sup> of June, 20:00-21:30:** Public conference by W. Haerberli (in French).

**30<sup>th</sup> of June, 8:00-17:00:** Field trip A, to the Pointe Helbronner (3462 m a.s.l., by cable car *via* the Aiguille du Midi) and Aiguilles Marbrées (3330 m a.s.l., on the Glacier du Géant, and a walk).

**30<sup>th</sup> of June, 8:00-17:00:** Field trip B, to the Dérochoir rock glacier (2500 m a.s.l., by cable car from Les Houches and Tramway du Mont Blanc, and a walk).

**1<sup>st</sup> of July, 10:00-16:00:** Field trip C, to the 100-m-deep borehole and rock glacier monitoring sites at Les Deux Alpes (Ecrins massif).

The public meeting is held at the Centre of Congrès, Chamonix, Mont-Blanc, France

Detailed information can be found at the project website [www.permanet-alpinespace.eu](http://www.permanet-alpinespace.eu)

### **Access and accommodation:**

You will find information about access to Chamonix and accommodation in the valley on the Office de Tourisme de Chamonix Mont-Blanc website:

<http://www.chamonix.com/accommodation.19.en.html>

Registration via email: [a.zischg@abenis.it](mailto:a.zischg@abenis.it)

**Contact:** [a.zischg@abenis.it](mailto:a.zischg@abenis.it), [philip.deline@univ-savoie.fr](mailto:philip.deline@univ-savoie.fr)

## Programme of 28<sup>th</sup> of June, 2011. Morning

### PermaNET press conference

28<sup>th</sup> of June, 11:00-12:00

Presentation of *PermaNET* results to media.

Volkmar Mair

Philip Deline

Philippe Schoeneich

Stephan Gruber

Michèle Curtaz

Presentation of the PermaNET documentary film (12 min.)

## Programme of 28<sup>th</sup> of June, 2011. Afternoon

### Workshop on methods for monitoring in permafrost environment

28th of June, 14:00-18:00

#### Movement detection and monitoring

- **Photogrammetry:** V. Kaufmann/ugraz + Michèle Curtaz/FMs + Pix4D
- **terrestrial laserscanning:** Ludovic Ravanel/EDYTEM + Marcia Phillips/SLF
- **air-borne laserscanning:**
- **inSAR:** Hugo Raetzo/BAFU
- **speckl & texture tracking:** Miche Gay/GIPSA-Lab

#### Thermal monitoring

- **rock sensors:** ARPA VdA
- **deep boreholes:** Philippe Schoeneich/IGA
- **electrical resistivity tomography:** Michael Krautblatter/ubonn

**PermaSense/X-Sense:** UZh (Stephan Gruber)/ETHz

## Programme of 29th of June, 2011. Morning

### Field trip

**29th of June, 8:00-12:00**

Field trip to the Aiguille du Midi, 3842 m a.s.l. (by cable car).

P. Deline and L. Ravanel

## Programme of 29<sup>th</sup> of June, 2011. Afternoon

### PermaNET open conference

**29<sup>th</sup> of June, 14:00-17:30**

Presentation of *PermaNET* results to scientific community, risk managers and stakeholders in natural hazard and water resources management.

**14:00-14:15:** Welcome and introduction (V. Mair, Lead Partner PermaNET)

**14:10-14:25:** The Alpine Space programme (C. Paris, National Contact Point France, Alpine Space programme, to be confirmed)

**14:25-15:00:** The permafrost monitoring network of the Alps. Example of PermaFRANCE. (P. Schoeneich, UJF)

**15:00-15:20:** The permafrost evidence inventory of the Alps (E. Cremonese, Arpa Valle d'Aosta)

**15:20-15:40:** The permafrost distribution map of the Alps (L. Böckli, UNIZH)

**15:40-16:00:** Permafrost and climate change (A. Kellerer-Pirklbauer, IGRS)

**16:00-16:30:** Permafrost and natural hazards (P. Deline, CNRS)

**16:30-17:00:** Conclusions and outlook (V. Mair)

**17:00-17:30:** Questions and discussions

**17:30:** Presentation of the PermaNET documentary film (12 min.)

Location: Centre of Congrès, Chamonix, Mont-Blanc, France

### PermaNET poster presentation and project fair

**29<sup>th</sup> of June, 17:30-20:0**

Presentation of *PermaNET* results to scientific community, risk managers and stakeholders in natural hazard and water resources management.

Presentation of monitoring techniques, of monitoring equipment and of specialized institutes/companies.

Location: Centre of Congrès, Chamonix, Mont-Blanc, France

## **Public speech: Permafrost research in the Alps**

**29<sup>th</sup> of June, 20:00-21:30**

Public speech by W. Haeberli (in French). Permafrost research in the Alps

Location: Centre of Congrès, Chamonix, Mont-Blanc, France

### **Programme of 30th of June, 2011. All day**

#### **Field trip A**

**30<sup>th</sup> of June, 8:00-17.00**

Field trip to the Pointe Helbronner (3462 m a.s.l., by cable car *via* the Aiguille du Midi) and Aiguilles Marbrées (3330 m a.s.l., on the Glacier du Géant, and a walk).

P. Deline and M. Curtaz

#### **Field trip B**

**30<sup>th</sup> of June, 8:00-17.00**

Field trip to the Dérochoir rock glacier (2500 m a.s.l., by cable car from Les Houches and Tramway du Mont Blanc, and a walk).

P. Schoeneich

### **Programme of 1st of July, 2011. All day**

#### **Field trip C**

**1<sup>st</sup> of July, 10:00-17.00, Departure at Chamonix: 7:30**

Travel by car and field trip to the 100-m-deep borehole and rock glacier monitoring sites at Les Deux Alpes (Ecrins massif).

P. Schoeneich



**Field trip A:** to the Pointe Helbronner and Aiguilles Marbrées (Mont Blanc massif)

**Field trip B:** to the Dérochoir rock glacier (Mont Blanc massif)

**Field trip C:** to the monitoring sites at Les Deux Alpes (Ecrins massif)