

# Swiss Experiment



## A New Environmental Monitoring Platform in Alpine Environment

Abstract number 1518

contact: [www.swiss-experiment.ch](http://www.swiss-experiment.ch)

### What is the Swiss Experiment?

The Swiss Experiment (SwissEx) is a multidisciplinary consortium of Swiss research institutions, which includes expertise from environmental to computer science. This environmental observatory, based on new generation of sensors and data technology, will provide affordable and unprecedented spatial and temporal in-situ observations to enhance our understanding of what environmental change means for society from local to regional scales.



### What are the objectives of SwissEx?



- to identify and predict key mechanisms involved in natural hazards
- to understand spatial and temporal variability of environmental parameters
- to involve local community in the monitoring process through educational programs
- to design an integrated data and meta-data collection infrastructure
- to develop novel wireless sensor network technology and innovative dynamic sensors

### Where was one of the first SwissEx field campaign and which sensors were used?

Grand St Bernard, Valais, Switzerland, 2500 m,  
headwaters of the alpine Dranse catchment: 0.8 km<sup>2</sup>,  
Sept-Oct 2007



23 wireless networked Sensorscope stations



- Air temperature
- Relative humidity
- Skin temperature
- Wind speed and direction
- Solar radiation
- Soil moisture
- Capillary pressure
- Precipitation

<http://sensorscope.epfl.ch>

1 reference station

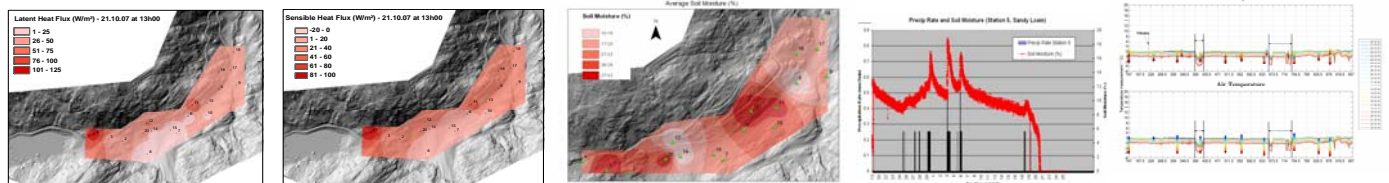


- barometric pressure
- turbulent fluxes (heat, moisture, CO<sub>2</sub>)
- surface temperature
- upwelling and downwelling radiation
- air temperature, relative humidity and wind speed at 3 heights



- 1km optical fiber for distributed temperature sensing
- High resolution (1m) water temperature measurement

### Example of first results of this fall field campaign.



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