



## **PERMAFROST MONITORING ON SCHILTHORN USING GEOPHYSICAL METHODS AND ENERGY BALANCE MEASUREMENTS**

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During the last year different kinds of investigations have been carried out on top of the almost 3500 meter high Schilthorn mountain in the Bernese Oberland, Swiss Alps. From April to October 2002 geoelectric soundings have been made once a month using a fixed electrode array. In addition, geoelectric soundings have been performed three times a day during the thawing-season in early summer (morning, noon and evening).

A nearby installed meteorological station is measuring most of the energy balance components since October 1998. The observed resistivity data (and their changes) are compared with meteorological data such as air temperature, snow height, relative humidity, radiation etc.

Furthermore, a 14 meter and a 100 meter deep drill hole along the electrode array allow the accurate measurement of the ground temperatures in 16 respectively 30 different depths.

As an additional geophysical method, repeated refraction seismic surveys have been conducted in October 2002

First results show the applicability of the geophysical monitoring techniques for detecting even small resistivity changes due to diurnal variations. Further results of this ongoing study will be presented.