



## **Prediction of slushflow hazard based on data from local meteorological stations**

Erik Hestnes and Steinar Bakkehøi

Norwegian Geotechnical Institute, Oslo, Norway

Seeking objective criteria for slushflow prediction and warning, meteorological data has been recorded at two slushflow sites in Rana District, North Norway, during a 10 years period. The two starting zones were equipped with standard meteorological devices. In addition, the fluctuation of water level in snowpack was monitored by pressure transmitters. The measurements were performed automatically every ten minutes. Within a distance of 20 km from the slushflow sites there are one standard climatological station and two precipitation stations.

One of the main topics of the research project is to evaluate the possibility of using neighbouring meteorological stations in predicting the current slushflow hazard and slushflow releases. Correlation of in situ measurements with records from the local meteorological stations is the basic input to the evaluation.

The analysis has documented that observations at the meteorological stations can be used as a base for predicting slushflow hazard in the Rana District. The temperature and humidity are well correlated in slushflow situations while the wind speed and precipitation measurements had to be adjusted by simple models taking into account topographic characteristics, distance and elevation differences. Generally, the result indicates that slushflow prediction might be based on observations at local meteorological stations if the necessary models for parameter transformation are established.