



## **ALP-RISK, a smartphone app for collecting data on geomorphic phenomena at high altitude in the Mont Blanc region**

Ludovic Ravel and Philip Deline

Université de Savoie, Laboratoire EDYTEM, Géographie, Le Bourget du Lac Cedex, France (ludovic.ravel@univ-savoie.fr)

A network of observers (mountain guides, hut keepers and mountaineers) has been created from 2005 for the Mont Blanc massif in order to acquire data on rockfall in permafrost-affected rock walls. This network, fully operational since 2007, is based on observation sheets or oral communications and has documented nearly 350 events with volume between 100 and 45,000 m<sup>3</sup>. Their analysis confirmed and helped to better understand the role of the permafrost degradation as main triggering factor.

To i) reinforce this network, ii) facilitate its observation work and iii) develop it as well in space (the whole Mont Blanc region, or eventually the whole western Alps) as in a thematic point of view (all glacial and periglacial brutal phenomena), the Alp-Risk app has been created in the framework of the Alcotra PréRisk Mont-Blanc project. The latter (2011-13) has been developed to improve the prevention of individual and collective natural hazards around the Mont Blanc massif.

The app was created for I-Phones and Androids in three languages (French, English and Italian) and allows, as intuitively and quickly as possible, transmitting data on natural hazards in high mountain (snow and ice avalanche, landslides and rockfalls, landslides, moraine destabilization, water pocket outburst flood, torrential flood, and others) to both practitioners (observations available directly on the app via an interface web), scientists, and possibly local managers.

Alp-Risk thus constitutes a new step for participatory science in the Mont Blanc region.