



## Monitoring of a recurring glacial lake outburst flood in north-western Nepal

Niklas Neckel (1), Jan Kropacek (1,2), Benjamin Schröter (2), Bernd Tyrna (1,3), and Manfred Buchroithner (2)  
(1) Institute of Geography, University of Tübingen, Rümelinstr. 19-23, 72070 Tübingen, Germany  
(Niklas.Neckel@uni-tuebingen.de), (2) Institute for Cartography, Dresden University of Technology, Helmholtzstr. 10, 01062 Dresden, Germany, (3) geomer GmbH, Im Breitspiel 11 b, 69126 Heidelberg, Germany

Since 2004 an almost annual recurring glacial lake outburst flood threatens Halji Village, located in Limi valley in one of the most remote regions of north-western Nepal. So far a considerable extent of rare fields and several houses have been destroyed. A cultural heritage site, the Halji Monastery which is the oldest Buddhist monastery in western Nepal is located only 30 m from the flood path. A supra-glacial lake at an altitude of 5300 m a.s.l. located approximately 6 km away from the village was identified as the source of the flood from recent satellite imagery. In November/December 2013 we carried out a field survey in this region in order to understand the drainage paths of the lake, to measure the volume of the glacial lake and to set up an Automatic Weather Station (AWS). To assess both the filling and draining of the glacial lake a terrestrial time-lapse camera was installed taking six photographs every day. These show the glacial lake and parts of the feeding water channels. The images combined with the AWS data will help us to understand the dependency of magnitude and timing of the outburst event to the temperature, snow conditions and glacier movements. The collected data will also help us to learn more about the flooding event and serve as the input for a two dimensional hydrodynamic model which simulates the flood extent under different flooding scenarios.