



## PhD - Seasonal slope response in an active debris flow catchment

The Chair of Geotechnical Engineering (Prof Sarah Springman) invites applications for a PhD candidature within the project “Seasonal response in an active debris flow catchment”. The Chair is responsible for teaching and research, primarily in the fields of soil-structure interaction, geotechnical (gravitational) aspects of natural hazards, permafrost, river dykes and geotechnical earthquake engineering. A further dimension to the group’s research interests is added through collaboration with multidisciplinary research teams in geophysics, hydrology, geology, remote sensing and natural hazards, for example at the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), who are our partners in this project through Dr Brian McArdell.

The Institute has an extremely well-equipped laboratory with a wide range of multi-functional experimental instruments, such as a geotechnical 2.2m drum centrifuge, a Hollow Cylinder Apparatus and many in-house developed stress path testing devices. We also have significant experience of conducting field tests, focussing on characterisation, monitoring and modelling for rainfall induced landslides and alpine permafrost.

Furthermore, we are fortunate to be able to count on excellent support from senior researchers and our technicians in the laboratories, and the mechanical and electronic workshops.

### Project



A proposal has been funded by the Swiss National Science Foundation to develop process understanding of the coupling between geological disposition, meteorological triggering and other factors that lead to rock slope instabilities, surficial landslides and debris flows within an exceptionally active alpine catchment. Site-specific knowledge of the generation, mechanical production, storage and remobilisation of rock debris and sediment triggered by meteorological and hydrological processes within the field study area (above), will contribute to developing a generic understanding for use in mitigation of these natural hazards. The transition from accumulation to initiation of landsliding to rapid debris flow is a key focus and crucial for predicting hazard potential in the runout zone.

## PhD student

You have excellent Bachelor and Master degrees in civil engineering, with specialisation in geotechnics, experience in experimental and practical work (preferably in the field) as well as data evaluation and interpretation. You are innovative, creative and a problem-solver.

You are fluent in English, and either German or French, since part of the role necessitates communication with local and state authorities. You are a well organised and efficient worker with good oral and written communication skills, and are enthusiastic about the opportunity of working in a multidisciplinary team.

Please send your complete application to Sonja Zwahlen, Human Resources, +41 44 633 3525; [sonja.zwahlen@igt.baug.ethz.ch](mailto:sonja.zwahlen@igt.baug.ethz.ch).

Deadline for applications is the **end of March 2013** and applicants should be prepared to begin work by 1<sup>st</sup> May 2013.