PhD Position
Paraglacial Rockslide Mechanics at the Great Aletsch Glacier

The Chair of Engineering Geology at ETH Zurich invites applications for a PhD position in the area of paraglacial rockslide mechanics in the terminus area of the Great Aletsch Glacier. The successful candidate must have an MSc in Earth Sciences or related field and be strongly interested in research. Knowledge and experience in rock mechanics and hydraulics, borehole monitoring, and glaciology are of prime importance. Good organizational, technical, and outdoor skills in high-alpine terrain are desired.

The PhD is part of a long-term and large multidisciplinary project focusing on interactions between stable and unstable rock slopes and adjacent valley glaciers. Repeated cycles of interglacial fluvial incision and glacial reoccupation in alpine valleys ensure valley walls in the bedrock landscape are constantly in a transitional state. Landforms in such regions are therefore commonly meta-stable, and as conditions such as glacial ice extent approach long-term limits, relatively minor changes in boundary conditions can elicit a strong response from the surrounding environment.

The PhD student of this project phase (III) will collect new borehole and photogrammetric data in order to constrain key hydro-mechanical processes occurring directly at the interface of an existing large instability and the retreating valley glacier. Key scientific tasks of this PhD student are:

- Monitor and investigate pore pressure variations and induced fracture slip in new monitoring boreholes drilled at the glacier-rock slope interface
- Monitor and investigate with time-lapse cameras the detailed displacement and deformation relationships at landslide-glacier interfaces
- Model and interpret the HM coupled mechanisms controlling landslide displacement rates in response to rapidly retreating glacial ice for large instabilities and secondary slope failures at oversteepened landslide toes

The duration of the position is 3-4 years and can be filled by the successful candidate in Spring or Summer 2017.

The Engineering Geology group consists of approximately 25 multidisciplinary scientists involved in a leading research and teaching program in quantitative engineering geology and hydrogeology. Detailed information about the Earth Science Department and the Chair of Engineering Geology is available on the web: www.engineering-geology.ethz.ch.

Complete applications should be sent by regular mail or e-mail to Prof. Dr. Simon Loew, Engineering Geology, ETH Zürich, Sonneggstrasse 5, 8092 Zürich, Switzerland, and must include the following: 1) Cover letter; 2) Curriculum vitae describing personal details and career history; 3) Complete course grades and transcripts; 4) Digital copies of both BSc and MSc theses; 5) two recommendation letters. Applications will be evaluated end of April 2017.