



The Department of Civil Engineering and Natural Hazards is currently looking for a

## Postgraduate Research Associate

### Project employment / PhD position

(Reference code: D3)

Extent of employment: 30 Hours per Week

Duration of employment: 36 months, starting in fall 2019.

Workplace: Peter Jordan Strasse 82, 1190 Vienna, Institute of Mountain Risk Engineering

Gross monthly salary and pay grade in terms of collective agreement for university staff (payable 14 times per year): B1, € 2.148,38

We are seeking a motivated PhD student to work in the project "Determination of sediment dynamics in torrential watersheds at different spatial and temporal scales under changing climatic conditions (DEUCALION III)", funded by the Austrian Climate and Energy Funds.

Floods and debris flows represent extreme events in torrential catchments. Two major shortcomings limit a more reliable hazard assessment. The factors influencing sediment availability are poorly understood and most approaches to forecast torrential processes neglect the actual initiation mechanism and its connection to hydro-meteorological trigger conditions. Building on existing regional assessments hydro-meteorological trigger conditions for torrential processes, we aim to investigate the missing geomorphological component and develop a coupled hydro-meteorological / geomorphological framework for the assessment of torrential flows in Austria.

The PhD-responsibilities and research will include field investigation of sediment dynamics and local hydrology in high alpine regions in Austria. The PhD-candidate will develop a probabilistic susceptibility tool to assess torrential hazard processes on a daily timescale. The results of the project shall be published in scientific journals and presented at scientific conferences and stakeholder workshops.

### Responsibilities

- Periodic field investigations using an unmanned aerial vehicle (UAV)
- Installation and maintenance of simple monitoring equipment
- Processing and analyzing spatial data on a GIS platform
- Analysis of hydrological time-series data using Matlab
- Further development of a probabilistic assessment tool
- Collaborating with other members of the project
- Support of project management
- Writing scientific publications
- Participating in training courses, workshops and conferences





### Required skills and qualifications

- Degree in Engineering, Earth Sciences, or related disciplines
- Strong background in natural and/or technical sciences
- Ability to work on and solve problems independently
- Team spirit, enthusiasm, creativity and good English skills
- Eligibility to enroll in a PhD program of the University of Natural Resources and Life Sciences Vienna
- Driver's license
- Physical and mental ability to work in a high alpine environment

### Desirable skills and qualifications

- Ability to work independently in an interdisciplinary team
- Fundamentals in hydraulics, geotechnics, geomorphology, geology
- Experience with GIS
- Experience with Matlab, R or other programming languages
- Strong statistical knowledge
- Good presentation skills
- Stress resilience, reliability
- Mountaineering experience
- Basic German language skills (field work in remote areas)

### We offer

- Interdisciplinary project with funding for a three-year PhD-period
- Excellent interaction with other research groups
- Possibility to visit (inter-)national research conferences
- Modern and high-end working equipment

Applications can be submitted until: 31<sup>st</sup> of August 2019

University of Natural Resources and Life Sciences Vienna seeks to increase the number of its female faculty and staff members. Therefore, qualified women are strongly encouraged to apply. In case of equal qualification, female candidates will be given preference unless reasons specific to an individual male candidate tilt the balance in his favor.

Please send your job application per email (motivation letter & CV incl. references) to [ian@boku.ac.at](mailto:ian@boku.ac.at), reference code: "D3".