



## PhD Position/Job-offer

### Impact of different timber harvesting technologies on hydrological forest soil properties.

Expiration Date: May 15, 2022

The University of Natural Resources and Life Sciences Vienna is seeking a PhD student to investigate and model changes in hydrological properties of forest soils on Flysch and Molasse sites due to different timber harvesting technologies.

Mechanized harvesting methods are an important component of sustainable timber management. The decisive factor for the use is the coordination of the technology with ecological framework conditions. This is especially true for "heavy" soils of the Flysch and Molasse zone, where timber harvesting techniques often lead to significant soil compaction. The aim of this project is to clarify how mechanical stress with different harvesting technologies affects hydro-physical properties of the soils (pore volume, pore connectivity, hydraulic conductivity, usable water storage capacity, etc.) in the short and medium term compared to unstressed areas.

The PhD candidate will investigate effects of different harvest technologies on components of the soil-water balance at different scales by conducting extensive field measurements (rainfall simulation experiments, continuous and discontinuous soil moisture, percolation, repellence, and other measurements) and extrapolate observations to the slope scale or small catchment scale by using hydrological models.

You hold a Master's degree in Hydrology, Geography, Forestry, Environmental Engineering or any other related discipline, and you have knowledge of and strong interest in forest hydrology. You are prepared to conduct extensive hydrological field tests and an interest in hydrological modelling (with basic knowledge of computer programming e.g. Python, R). You are fluent in English, have good written and oral communication skills, and can work independently. We seek candidates who can bring creativity and initiative to the study, with experience or interest in thinking across disciplines and the ability to work collaboratively. Driving licence valid within the EEA (European Economic Area) is mandatory!

This position is hosted by the Institute of Mountain Risk Engineering (IAN), University of Natural Resources and Life Sciences, Vienna. IAN supports graduate degrees in Civil and Environmental Engineering, Forestry, Geography, Mechanical Engineering, Water Resources, Environmental Science, and Geological Sciences. The candidate will be supervised, and part of a trans-institutional group led by Dr. Christian Scheidl (University of Natural Resources and Life Sciences Vienna, Inst. of Mountain Risk Engineering), Dr. Gertraud Meißl (Universität Innsbruck, Inst. of Geography) and Dr. Gerhard Markart (Austrian Research Center for Forests - Innsbruck, Unit: Torrent Processes and Hydrology).

Start Date: June 2022.

Position Details and Benefits: The student will be housed in the IAN, BOKU and supported with a graduate research assistantship for 3 years based on the standard personnel costs (doctoral candidates). Support includes conference travel and further training, e.g., summer schools. Teaching assistant opportunities within the department are also available. The University of Natural Resources and Life Sciences is located in Vienna, Austria-Europe, the capital of Austria with excellent cultural, dining, and recreational opportunities locally as well as in the nearby region.

Interested? Please email to [ian@boku.ac.at](mailto:ian@boku.ac.at) with the subject line "HYDROFLYSCH" and attach as a single PDF: 1) a 1-page cover letter describing your interest in and suitability for the position; and 2) your current CV or resume.