Graz University of Technology
Institute of Rock Mechanics and Tunnelling

Master's Project (MP, 5 ECTS)

Literature Research on Automated Detection of Recent Rock Fall Deposit

Description

Rock fall events can provide large amount of debris, which is in most cases deposited directly onto older deposits. This can either act as an additional load, which subsequently leads to slope instabilities and hence secondary landslides, or provide additional fines for mud slides.

Both processes are secondary landslide, caused primary by rock fall events and may pose a risk to infrastructure and population. Hence the processes of depositing, fragmentation and triggering as well as the characteristics of such sites (slope movements) shall be investigated. The research is a collaboration between the Graz University of Technology, the Geological Survey of Salzburg and the Geological Survey of Carinthia.

Besides other factors, like the general slope movement or the fragment geometry, the localisation of fresh rock fall deposits on the slope plays an important role regarding the localization of the additional load onto the slope and the quantification of the rock fall volume. The delineation of fresh rock bolders on the slope in orthophotos can indicate regions of interest and decrease the computation effort for the subsequent analyses (volume quantification, velocimetry etc.). Hence literature research shall be performed on possibilities to automatically identify regions of accumulation and erosion using either point clouds or satellite data (orthophoto, digital elevation models).

This project shall contribute to an improvement understanding of rock fall triggered slope instabilities.

Keywords: Particle Image Velocimetry, Rock Glaciers

Templates for the scientific report can be found on the institute's homepage. There is also a guideline for scientific writing free downloadable at the homepage, whose compliance is mandatory. The language for the report can either be in English or in German.

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Start by appointment

Duration ca. 125 h

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