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Geophysical and geological investigations to identify landslide activity - two case studies in Austria

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The aim of the studies was the geophysical exploration of landslides and an engineering geological assessment of the landslide activity using the results of mineralogical and geotechnical analysis. The objective was to interpret the structure of the landslides regarding possible depths and spatial delimitation in context to the material properties of the soil, and the identification of potential hazards.
Two case studies will be presented in detail.

A landslide in the Gresten area is affecting some houses. The survey area is located in the Grestener Klippenzone (Grestener Schichten and Buntmergelserie), which is known to be prone to landslide activity. Multi disciplinary methods, such as geolectric measurements, engineering geologic mapping of the landslide, mineralogic analysis of sediment samples from dynamic probings were applied to characterize the slope.

The investigation site near Oberschlierbach is located above the monastery of Schlierbach. The slope, long known as unstable, is predominantly agriculturally used. However, damages to buildings in the area of the mass movement occurred. The sandstones, mudstones and limestones of the Altlengbach formation of the investigated area are deeply weathered. No natural solid rock outcrops exist in the vicinity. Therefore geoelectric measurements in combination with existing drillings and a detailed geologic map gave a picture of the physical/geological properties of the slope.

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JOCHUM B., LOTTER M., OTTNER F., TIEFENBACH K. (2008): Fallstudie Gresten (NÖ) - Geophysikalische und ingenieurgeologische Methoden zur Untersuchung von durch Massenbewegungen bedingte Bauschäden in Niederösterreich.- unpublished report Geological Survey Austria and Univ. Nat. Resources and App. Life Sc.; Vienna.
JOCHUM B., LOTTER M. (2008): Fallstudie Schlierbach (OÖ) - Geogene Naturgefahren und Risikomanagement unter Berücksichtigung primärer und sekundärer wasserwirtschaftlicher Rahmenbedingungen. - unpublished report Geological Survey Austria; Vienna.