



Detection and assessment of slope stability by means of vegetation types, soil and morphological parameters

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The recent increase of extreme weather events not only indicates climate changes but also represents raising threats to existing infrastructures and public and private properties. The occurrence of natural hazards causing major damages has increased significantly. Due to the special geomorphological situation alpine regions are particularly vulnerable to landslides and surface erosion. Strategy concepts are being developed to reduce the risk of erosion calamities. Slope processes have to be considered as complex interactions of vegetation types, soil and morphological parameters. The type of soil movement and the degree of damage is subject to varying mechanical processes and physical soil conditions. In order to gain a deeper understanding of those interacting procedures, case studies are carried out at characteristic slope sites within the torrent catchment area of the Trattenbach (Salzburg, Austria). The centre of gravity is put on the development of evaluation methods to assess the risk the complex interactions of soil and vegetation. Vegetation structures versus surface erosion and deeper soil movements are being analysed. The deduction can be made that the type of vegetation not only depends on temporal and spatial components but also fulfills a function as an indicator of landslides and erosion processes. This indicating role, its reliability and the degree of information, which can be gained by the structures, will be discussed. The presented research is part of an interdisciplinary project dealing with the development of standard tools for the quantification of potential risks and the prevention of natural hazards.