



Assessment of geomorphic features with high resolution LIDAR and optical data - case studies in the Eastern Alps

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In recent times, high resolution DEM's derived from LIDAR/airborne laserscanning data (LIDAR: Light detection and ranging) are becoming more interesting for geomorphic applications due to unique potential and area wide availability. This article discusses the feasibility of last pulse laserscanning data for detection, visualisation and interpretation of geomorphic indicators for mass movements of all kinds. The option to "eliminate" vegetation by using last pulse data and filtering to achieve a Digital Ground Model (DGM) in contrary to Digital Surface Models (DSM) derived from photogrammetry is a crucial advantage.

This study includes several test sites representing a wide range of different geological situations in the Austrian provinces of Vorarlberg and Tyrol as well as the Italian province of South Tyrol/Alto Adige. Due to the fact that geomorphic features are detectable at a different rate in varying spatial resolutions and scales, a comparison between laserscanning and optical data was carried out. First results are presented to show the variety of information which is detectable visually as well as a first assessment of delineation of features with the aid of automated approaches such as terrain analysis.