Geophysical Research Abstracts,
Vol. 11, EGU2009-8029-2, 2009
EGU General Assembly 2009

Development of an efficient methodology for mapping and assessing potential rock fall source areas and run- out zones

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A rock fall prone area in Carinthia (Austria) was chosen to develop a methodological, easy to apply strategy to identify potential rock fall source areas and run-out zones. On the basis of an evaluation method, the study area could be classified according its susceptibility towards potential rock fall occurrence.
Method development included continuous research of archive data about previous events and rock fall areas. Automated Remote Sensing and GIS methods enabled the division of the study region into areas with similar rock fall disposition, which could be verified and adjusted through a general field survey. Thus, the homogeneous areas displayed the interaction of terrain surface and lithologic- structural characteristics of the rocks. Manual Remote Sensing analysis was used to identify upper potential source areas and process related features as deposit and source areas of past rock fall events. Field investigations were carried out on the basis of a standardized mapping method using data sheets with defined mapping parameters. Information about past, current and potential rock fall source, transportation and deposit areas was acquired through field work. The results of the detailed field investigations were used to both validate/falsify the Remote Sensing analysis and also to distinguish potential rock fall source areas.
Empiric methods enabled the designation of the study region into areas of different rock fall susceptibility.