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# Effects of geological factors on rockfall events:Ermenek (Karaman), Turkey

K. Zorlu and H. Taga

Mersin University, Geological Engineering, Mersin, Turkey (kivancgeo@mersin.edu.tr)

Rockfall is one of the main land surface processes in the natural evalution of steep mountain and hill slopes. Due to its nature, rockfalls which are one of the natural phenomena, have serious damage on structures, and may result in loss of lives. Rockfalls processes are controlled by the geologic condition of the rock, the climatic and meteorologic influences and the associated weathering processes. Furthermore, the form and the direction of discontinuities and the related intersections also play an important role for the type of detachment and the size and shape of the blocks. In the study area, rockfall events are initiated by discontinuities, freeze-thaw process and physical-chemical weathering influence. On the other hand, durability difference among the the same lithological units considering with minerological properties also affect the rockfall. The area under study covered by the Mut formation which is a typical reefal limestone, has a lateral and vertical gradational contact with Köselerli formation that consists of gravelly sandstone, marl and sandy limestone and unconformity on the Yenimahalle formation. To simulate fall of a boulder down a slope and to compute rockfall trajectories, a number of two or tree dimensional programs have been developed, and tested for the last few years. The effects of geological factors on the rockfalls are also investigated and the susceptible zones by using two dimensional rockfall analyses results are mapped due to the fact that the region is an important settlemet area. Up to now almost 500 residences were damaged severily, and several losses of lives were also recorded by the rockfall events in and around the Ermenek.