

## ROCKSLIDES IN THE CRIMEAN MOUNTAINS (UKRAINE)

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### ABSTRACT

The Crimean Mountains represent tectonically active compression orogene situated in the Eastern branch of European Alpids. Seismic activity along with unstable distribution of rock complexes created conditions for the development of some of the largest-scale landslides in Europe. The paper summarizes preliminary part of the research of geomorphologic aspects of slope deformations in the area of the Crimean Mountains which is based on the interpretation of a digital relief model (SRTM), satellite images LANDSAT and RADARSAT and preliminary field reconnaissance. From the lithological and morphostructural points of view the territory is made up by three zones of monoclinical ridges and cuetas. The highest zone, lying southernmost, is based on lithologically pure Jurassic limestones with altitudes exceeding 1600 m. It is seismically most active part of the range with epicentres distributed mainly along subductive coast of the Black Sea. Known epicentral areas can be found in the vicinity of the town of Jalta and in a wide zone along a deep transversal Alushta fault. At present we can observe mainly the youngest generation of slope deformations that originated in the course of a series of earthquakes in 1927. Catastrophically fast processes in the culmination zone of the Crimean Mountains largely represent the culmination of long-term sackung affecting edges of karst plateaus. In the course of geologic development entire generations of landslide complexes originated due to individual earthquakes in some areas (e.g. in the northern vicinity of Jalta) forming thick cone-shaped accumulations. North of the main ridge there are two zones of cuetas following lime-Palaeogene and Neogene sediments slightly inclined towards the north. Individual rotational landslides affecting Sarmat flysch complexes with the locations of carbonates reach the size of 5 – 15 km<sup>2</sup> in fault gap valleys. Some of these magelandslides reach the volume of almost 1 km<sup>3</sup>, which is the size nearing rock landslides and avalanches in the highest orogenous zones of the Earth. Studied slope deformations on the outer cuesta of the Crimean Mountains represent a very interesting example of extremely large instabilities affecting slopes with a very small elevation gradient (to 150 m) and relatively small inclination (around 20° max.). Current research of these slope deformations can bring interesting information on the lower limit of morphometric parameters under which similarly large slope deformations can still occur.

Keywords: Crimean Mts, DEM analysis, cuetas, slope deformations, flysch  
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