



Estimation of the manifestation of landslide phenomena on granitic formations, induced by seismic activity. Case study of mountainous mass of Central Rhodope, Greece.

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The seismicity of an area is determined by the distribution of seismic activity in time and space, although it doesn't specify actually the resulting damage and the seismic risk of the area in interest. The geographical distribution of the seismic risk of an earthquake, depends upon many factors which are related with the properties of the seismic source (focal depth, magnitude and frequency) the mechanism which generated the earthquake, the ground conditions (lithology, tectonic regime, depth of water table) and also the quality of the manmade constructions.

For the estimation of the seismic risk related with triggered landslide phenomena it is necessary to estimate (a) the seismic activity, (b) the presence of active faults, (c) the geological structure, (d) the geotechnical characteristics of the formations of the research area (e) the morphology (slope inclination) and finally the underlying hydrological and climatological conditions.

The objective of this paper is to estimate the probability of landslide phenomena (rock falls, rock and soil slides, soil liquefaction) triggered by earthquakes at the mountainous mass of Central Phodope, Greece. Combining the existing data and using an appropriate model based on Newmark's analysis, these been an effort in estimating the probability of failure in certain areas. As a result there been produced a series of maps which show in detail the geological settings, the specified geotechnical parameters, the static factor of safety and the seismic landslide hazard in the mountainous mass of

Central Phodope.