Rockfall Susceptibility Zoning and Evaluation of Rockfall Hazard at the Foot Hill of Mountain Orliagas, Greece

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Rockfalls are frequently generated in mountainous areas and threatened manmade environment. Therefore, the detachment of large size boulders and their fall track are issues that should be evaluated for urban planning and the construction of lifelines and road networks. In order to achieve this, several methodologies had been proposed and applied, regarding the evaluation of the landslide hazard. The most known methods concern the application of GIS software for the evaluation of the run-out distances of boulders and the simulation of the fall tracks. In this article, a delineation of areas susceptible to rockfalling at the foothills of mountain Orliagas, Greece, is provided using the minimum shadow angle method and, in addition, selected case studies of rockfalls were studied. These cases were simulated and analyzed using the Rockfall software while the employed parameters were tested and calibrated using silent witnesses. The outcome provided by this study, is that the simulated fall track and the rockfall run-out distance were in agreement with the spatial distribution of the reported boulders while the total kinetic energy and the bounce height during the fall track have been evaluated, thus can be used for the construction of remedial measures. In addition, as it is shown in the resulting by this study maps, the area between the villages of Ziakas and Spileo can be separated into two zones, A and B, regarding the landslide hazard for the road network which is evaluated as low and very high, respectively.

A Newly Discovered Fossil Stratabound Hydrothermal Manganese Deposit at Aspro Gialoudi, N.W. Milos, Greece

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The white smoker Mn-Ba-Pb deposit at Aspro Gialoudi in NW Milos is shown to be a fossil stratiform exhalative hydrothermal deposit analogous to the Vani manganese deposit which is located about 1.3 km to the NE. Both deposits are located proximal to fault systems. However, the Vani manganese deposit is adjacent to the NW-SE-trending Vromolimni-Kondaros Fault which marks the western margin of the Gulf of Milos and is one of the major faults on Milos, whereas the Aspro Gialoudi deposit is adjacent to the relatively minor dimensions NE-SW fault on the west coast of Milos. Both the Aspro Gialoudi and Vani manganese deposits formed in a similar manner, namely by transport of hydrothermal fluids through the adjacent fault systems into a reservoir of volcanoclastic sandstone to produce a deposit initially consisting of pyrolusite and occasionally ramsdellite, which were later replaced by cryptomelane, hollandite, coronadite and hydrohaeterolite. Because the NE-SW fault on the west coast of Milos is minor compared to the Vromolimni-Kondaros Fault, the Aspro Gialoudi manganese deposit consisted mainly by cryptomelane, hollandite, coronadite and hydrohaeterolite, is very much smaller than the Vani deposit. The Aspro Gialoudi deposit has not been described before because of its remoteness and small size.

The hydrothermal manganese deposit at Aspro Gialoudi was formed little earlier to roughly contemporaneously with the Vani manganese deposit at about 1.8 Ma. by similar processes and are considered to be integral parts of the same hydrothermal system.