

**ROCKFALL EPISODES ALONG STRUCTURAL DISCONTINUITIES OF THE VESUVIUS VOLCANO CRATER RIM: MORPHOSTRUCTURAL STUDY AND ANALYSIS OF SEISMIC SIGNALS – ID 2000**

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Seismic signals recorded in volcanic areas and associated with volcanic activity can be originated from many different sources. Among various types of transient signals, i.e., explosion quakes, tectonic quakes, long period events, those related to rockfall episodes are very important because rockfalls might contribute significantly to volcanic hazard even in areas characterized by volcanic quiescence. In this study we have analyzed the intracrateric rockfall events occurred since 2001 along the Vesuvius asymmetrical crater rim. Field investigations of the main morphostructural features carried out in the summit area, along with digital images collected during the study period, allowed us to infer the time evolution and the areal distribution of the rockfalls. Two main source areas located on opposite sides of the volcanic crater, to the NW and SSE, have been identified. Both of them are characterized by intense fracturing and fumarolic emissions. Seismic signals of the intracrateric rockfall events, recorded by the broadband and short-period permanent stations operated by the Osservatorio Vesuviano-INGV of Naples and located within a few kilometers from the crater, have been analyzed in terms of duration and frequency content in order to characterize the peculiar features of the source areas.