



Earthquake hazards in the island of Ischia (Campania, Italy)

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The island of Ischia, located in the Tyrrhenian sea a few kilometres from the coast east of Naples (southern Italy), offers a representative portrait of the geologic hazards in a volcanic island, due to a combination of geographic location, active tectonics and volcanism, climatic conditions. In fact, earthquakes and volcanic eruptions, as well as floods and landslides, have caused major natural disasters up to very recent times. The power of these events has been even able to significantly reshape the ground morphology, leading to serious damage to the urban settlements and the loss of numerous lives. Ischia is affected by slope movements and huge landslides due to a predisposing geological framework characterized by a complex tectonic history, volcanic activity and slope instability. Specifically, the active volcanism provides the lithological and morphostructural setting (i.e., steep slopes due to rapid uplift) most prone to sliding. Moreover, eruptions and related seismicity represent an effective triggering mechanism. Specifically, here we focus on the interpretation of the geological effects induced by several earthquakes occurred in the Ischia island. The intense historical seismicity is located mostly in a narrow strip of land stretching east-west from Casamicciola to Lacco Ameno (north of M. Epomeo), with MCS intensities ranging between VII and X. Following several strong earthquakes occurred since 1767, which produced serious damage to the northern coast, many landslides detached from the northern flank of M. Epomeo; fractures and hydrological changes were also observed. In general, rock falls and debris flows, mainly concentrated along the major fault zones, have been more common in northern part of the district, which appears as the most disaster-prone area. Landslide phenomena have occurred also in connection with other major natural disasters such as the volcano eruptions and the 1910 and 1924 flood events. These disasters have left clear scars in the territory, continuously modifying the land and submarine morphology. The unrelenting growth of urban settlements and tourist re-

sorts in this beautiful island have sensibly increased in the last decades the overall risk connected to the hazards discussed above, requiring expensive reconstruction efforts and structural measures.