



Long term continuous monitoring of the landslides associated with seismic events

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In the last decade, the Alpine - Carpathian area was affected by a lot of natural hazard events such as: floods, landslides and windstorms as a primary consequence of the important climatic changes. In the Romanian segment of the Carpathian chain, the first two types of natural hazard many times got a dramatic character, endangering till now large human communities and also the environment. In the Carpathian area, the main causes for these phenomena are: the nature of material (flyschoid deposits containing rather soft materials with low mechanic properties), geodynamic context (the existence of Vrancea seismogenic active zone with earthquakes and active tectonics), weathering effects leading to huge and irregular precipitation quantity, as well as the anthropic activity. The aim of this paper consists in the implementation of the methodology and geophysical measuring system (GMS) destined to the monitoring and diagnosis of the active faults and associated landslides, in the test site Provita de Sus, Prahova District. Owing to an increasing threat of the landslides in this zone, models for disaster forecasting are imposed. In this context, the following specific activity stages were accomplished: (i) optimisation of the specific sensor structure in laboratory and field conditions; (ii) experiment and continuous improvement of the GMS at the peculiar conditions of the monitored area for pattern recognition; (iii) assessment of the short-term electromagnetic precursory parameters related to both the earthquakes (EQ) occurred at intermediate depth interval, characteristic to the seismic-active Vrancea zone, and the landslides associated, mainly, to the active faults developed in the Subcarpathian area; (iv) elaboration and managing of the specific data to produce 2D geophysical models and 3D tomographic images as a first step for the risk assessment.