

ENGINEERING GEOMORPHOLOGY

Geo-hydrological hazard and risk assessment



Researches on geohazard and geomorphological risk were performed with regard to Ligurian territory. Heavy rains of short duration that historically characterize the region are increasing according to change in rainfall regime. The increased vulnerability of the area due to urban sprawl or land use variation increases the geological risk conditions.

Ligurian landslides are studied both for rapid-type (flows and falls) and for slow kinematic-type, triggered in a morphoclimatic context different from the current one ("palaeo-landslide"). Recent studies are gradually showing that a large amount of these large-scale landslides are part of a wide complex of deep seated slope deformation, triggered in the Alps-Appennine system for geological-tectonic, seismic and climatic causal factors.

The geomorphology and hydrogeology of Ligurian karst rock masses is a research line experienced with the preparation of karst level linked to Water Master Plan, on behalf of Liguria Region. Some karst massifs were monitored from hydrology and climatic point of view: it was shown a complex relationship between rains, air temperature, and temperature, electrical conductivity and flow rate of the underground water in the Ligurian karst massifs, related to different hydrogeological structure.

Keywords: geo-hydrological hazard, applied and environmental geomorphology, karst environment

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