



Geophysical approach for emergency management of landslide: the experience of Basilicata Civil Protection (southern Italy)

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The Basilicata region (Southern Italy), being dissected by numerous and often significant rivers and characterized by the outcrop of terrains with bad mechanical properties, is one of the more exposed regions of the southern Apennine chain to hydrogeologic hazard and shows a complete panorama of mass movements. During the last years, after strong precipitations, this region has been affected by the reactivation of many quiescent landslides that involved buildings and infrastructures constructed on the slopes. The risk for people and assets needed the intervention of the end users involved in the risk management and, in particular, the inspection of Regional Department of Infrastructure and Civil Protection (RDICP). In many involved areas and for many families evacuation decrees have been issued in order to allow the damage valuation. An important contribution has been provided by the geophysical data and, in particular, by the 2D electrical resistivity tomographies (ERTs) that have been carried out in the areas some days after the event by IMAA-CNR.

In this work we present the results regarding the application of unconventional geoelectrical techniques used for the emergency management of landslide in Basilicata Region (southern Italy).

The information obtained by the application of indirect surveys appeared to be particularly useful for the end users involved in the risks management. In particular, taking into account the cycle of landslides emergency, the obtained data could give a valid contribution during the post-event phase which mainly regards the damage valuation. Indeed, only a corrected assessment of the damage and a precise geometric reconstruction of the landslide body, can direct the intervention actions of the end users.

The results represent a valid cognitive support to choose the most appropriate technical solution for strengthening of the slopes and an example of best practice for the cooperation between the research activity (IMAA-CNR) and field emergency (Regional Civil Protection).