



## **Geoelectrical tomography as an operative tool for emergency management of landslide: the experience of Basilicata Civil Protection, Southern Italy**

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In the recent years, the collaboration between the scientific community and the end-users involved in the risk management has become increasingly necessary. There are many national and international projects that meet this requirement, in particular some results presented in this work have been acquired in the frame of MORFEO (Monitoraggio e Rischio da Frana mediate dati EO) project funded by the Italian Space Agency (ASI).

The collaboration between Civil Protection Office of Basilicata Region and the research Institute of Methodologies for Environmental Analysis (IMAA) of the CNR allowed to test an innovative technical approach for investigating landslides during the first phase of emergency management.

The proposed approach is based on the application of electrical resistivity tomography (ERT) method to obtain information about the deep characteristics (sliding surface, thickness of slide material, etc.) of a landslide body. It also highlighted areas characterized by high water content, in which the increase of the saturation degree and pore water pressures could cause a weakening of the slope.

The information obtained by the application of ERT proved 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 gave 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 orientate the end users decisions.

Taking into account the good results obtained until now, the collaboration between Civil Protection Office of Basilicata Region and the CNR-IMAA will be further consolidated in the frame of other projects such as DORIS (Ground Deformation Risk Scenarios: an Advanced Assessment Service) project funded by EU in the FP7.