



## **Geotechnical techniques and electrical resistivity tomography for the stability analysis of a slope in lucanian Apennine (southern Italy).**

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An integrated approach based on the jointly application of high-resolution Electrical Resistivity Tomography (ERT) and geotechnical techniques has been applied to evaluate the stability analysis of an area located in Tricarico town, Southern Apennine chain (Basilicata, Italy). The subsurface geometry of the investigated area has been completely reconstructed by using 2D Electrical Resistivity Tomography (ERT). A well defined contact located at a depth of about 40 m between two different lithological formations was depicted. The results have been confirmed by the comparison with the data coming from boreholes driven in the area. The good agreement between the ERT and geotechnical data allowed us to extend the borehole data and to draw a 2D geotechnical model of the subsoil. The latter has been used to investigate the pore water pressure distribution inside the slope and to evaluate the stability of the investigated area. The paper clearly demonstrated the powerful ability of the ERT to reconstruct with accuracy the subsoil geometry, which is relevant for any geo-mechanical model. On the other side, it was quite evident the ambiguity and misjudgement connected with some geophysical interpretations carried out without a comparison with geotechnical data.