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Electrical imaging of the sliding geometry and fluids associated to a large rockslide

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Large rock slide geometry recognition is a fundamental stage for the understanding of mechanisms leading to wide destabilisations. This presentation deals with the applicability of Electrical Resistivity Tomography (ERT) in such heterogeneous morphologies.

One of the most studied and instrumented deep rockslide in Europe: the la Clapière Landslide is taken as example. An accurate geological and geomorphologic study was realized taking into account 25 years of observations and monitoring.

A correlation is done with 3 ERT profiles performed within the landslide. Very good correlations were obtained for the determination of sub-horizontal structures which confirmed the localisation of the sliding surface that reach a maximum 80-90m depth. Comparisons with back-calculated resistivity models also allowed determining the presence of vertical structures controlling both the water repartition and slope destabilisation.

It gives the use of ERT an efficient tool for large scale landslide imaging, such as deep seated rockslides.