



EARTH'S APPARENT RESISTIVITY ANALYSIS IN A SEISMIC AREA OF SOUTHERN ITALY

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Since 2005 a continuously operating magnetotelluric (MT) system has been installed in Tramutola, (Southern Italy) to study possible changes in the electromagnetic fields related to seismic events. The station is located in Agri Valley, which was struck by a strong seismic event in 1857 (XI degree on the MCS). The recent seismicity of the area is quite sparse and characterized by events with magnitude lower than 5. Nevertheless this area is particularly exposed to environmental risk due to the presence of numerous oil wells. The MT method is well-know to reveal variations in electrical resistivity within the Earth at large depths, and in order to really measure earthquake-induced resistivity variations it is necessary to apply robust statistical techniques able to define the stability of the impedance tensor in absence of significant variations in subsoil. The reliability of the apparent resistivity estimates, obtained with robust methods, is guaranteed by the use of Remote Reference Method which allows a further decrease of the EM incoherent noise.

The results presented in this paper concern information about the electric structure of the Agry valley, the stability of the magnetotelluric transfer function and the possible correlations with the seismic activity.