

First MT Observations in the Vilariça Graben (NE Portugal)

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The geological structure of northeastern Portugal is complex and mainly associated with the late Variscan tectonic episodes. These events originated two main structures: the Penacova-Chaves-Verin and the Manteigas-Vilariça-Bragança faults. Several basins were generated associated with those fractures. The Vilariça basin is one of them. This consists of an elongated depression approximately 20 km long and 2 to 3 km wide, trending NNE-SSW. It is located astride the Manteigas-Vilariça fault, suggesting that it might correspond to a structural depression related to reactivation movements on that fault (Cabral, 1989). Its tectonical evolution is of great interest and several geological studies have been performed in the last decades.

Our goal is to produce a geoelectrical picture of the region from MT data. To date, fourteen soundings (180-0.01 Hz) were carried out in the northern part of the basin. One-dimensional (1D) interpretation of the determinant of the impedance tensors, provided the first approach for a preliminary three-dimensional (3D) model. This one evidences conductive zones related to sedimentary fill and faults.

Reference

Cabral, J., 1989. An example of intraplate neotectonic activity, Vilariça basin, Northeast Portugal. *Tectonics*, Vol. 8, N^o 2, 285-303.