

Geophysical study in a Neolithic burial mound in Proença-a-Nova, Portugal

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Abstract The municipality of Proença-a-Nova in cooperation with Associação de Estudos do Alto Tejo, and the University of Evora have been excavating and, at the same time, doing geophysical surveys in a neolithic burial mound known as Cabeço da Anta near the town of Proença-a-Nova in Portugal. Excavation in the site started in the summer of 2013 and still goes on; however, before excavating a geophysical survey with ground penetrating radar (GPR) and electrical resistivity tomography (ERT) methods were used as an attempt to find the location of the mound's chamber and its main entrance. From the two geophysical methods used up to now only the electrical resistivity tomography has shown a good potential to detect and delineate the dolmen's structure buried in the mound. On the contrary, ground penetrating radar was not very useful to detect those same structures because of the high diffraction caused by the surface rocks. With the ERT profiles it was possible to infer that the mound was covered by blocks of rocks which were placed on top of clay and silt. The slabs of schist that compose the walls and the cover of the dolmen chamber were also identified by the ERT profiles. The geophysical surveys done up to now were not able to find the dolmen's main entrance. The comparison of the interpretations done using electrical resistivity tomography with the results of the excavation shows a good coincidence which, to a certain extent, validates the use of the ERT method in Cabeço da Anta.

Keywords GPR, Electrical resistivity tomography, Burial mound, Neolithic, Portugal