



## **Combining 3D seismic tomography and ground-penetrating radar to reveal the structure of a megalithic burial tomb**

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This work describes a case study concerning a prehistoric buried tomb (around 3000 years B.C.) located near Évora (Portugal). This monument is a tomb completely buried with only five visible irregular small stones distributed in a circle of 3 meter in diameter. A multi-approach combining 3D seismic tomography and ground-penetrating radar (GPR) have been applied to identify hidden elements and arrangement of the stones, required prior to any excavation work. The methodology for the 3D seismic data acquisition involves a total of 24 shots recorded by four lines, with twelve fixed receivers each one. For the GPR survey was used a 400 MHz antenna which moves along parallel lines with 50 cm separation, over a 30x30 m<sup>2</sup> area that contains the buried tomb; the GPR unit was configured to a horizontal rate of 50 scans per meter (1024 samples/scan) and a time window of 60 ns.

This multi-approach procedure allowed defining: (i) the housing of the tomb in the basement structure; (ii) the presence of a hidden corridor; (iii) the description of the internal structure of the walls of the tomb; (iv) the state of preservation of the monument.

**Acknowledgements:** This work is co-financed by the European Union through the European Regional Development Fund under COMPETE 2020 (Operational Program for Competitiveness and Internationalization) through the ICT project (UID / GEO / 04683/2013) under the reference POCI-01-0145 -FEDER-007690.