



## **Geoarcheological and GPR applications in a medieval tomb context to detect human remains**

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The paper focus on a new field of GPR application and geoarcheological approach recently tested in forensic geology contexts. Controlled forensic geophysical research involving GPR has proven to be a valuable resource, and the information gathered from these studies has been applied to forensic casework. The probability of detecting a grave for a longer postmortem interval differs with the soil type and the materials added to the grave with the body. The specific case study is that of a medieval sarcophagus, containing several bony remains probably attributable to Roberto il Guiscardo, located in the church of the SS Trinità di Venosa, a village located about 40 Km north from Potenza (Basilicata, Italy), recognized also as a national monument with royal decree of 20 November 1897. Unfortunately, during the restoration works there was a cement spill inside the sarcophagus containing the human remains. Hence, the need to identify the exact position of the bones in order to proceed to a subsequent sampling to submit at DNA analysis and absolute dating.

The radar profiles from this survey showed the clear amplitude contrast anomalies, emanated from the human bony remains. The strongest amplitude contrasts are at around 0.2-0.5 meters depth, which is consistent with the depth of the buried corp.