

Ground Penetrating Radar at Gangivecchio, Sicily: Testing the Wave of the Future

In 2004, ground penetrating radar (GPR) was first deployed at the Greco-Roman site of Gangivecchio, Sicily (site summary in De Angelis 2007). Twenty-two radar grids, covering nearly 3,500 sq m of area, were investigated with this remote sensing technology. The beauty of GPR is that it is possible to re-analyze and re-study the data in a site permanently because the spatial relations in the archaeological record are preserved and not destroyed as they are in the process of excavation (Conyers and Goodman 1997). GPR was chosen to study the archaeology of Gangivecchio because it was necessary to identify the most promising locales to excavate on the 56 hectare property and because the deposits at Gangivecchio are known (from auguring and test pitting) to be deep. GPR is the most reliable of the remote sensing techniques for measuring depths of features (Conyers and Goodman 1997).

Although the tools of GPR have improved greatly in the last two decades (Conyers and Goodman 1997), the data are still a challenge to interpret (Conyers 2004, 2012). The most reliable method of interpretation is on the basis of radar profiles tested by excavation. This was the goal of GPR deployment at Gangivecchio. First, radar would be used to identify promising sub-surface features, then there would be test-pitting and full strip excavation to expose the features found in the radar profiles and identify their true nature. Testing of radar data via excavation has taken place periodically since 2004, with a high rate of success. A “type collection” of radar images and their ground-truth counterparts is being created (with comparison data from studies in the United States) and will be highlighted in this review of the technique.

References

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