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## Magnetic and ground penetrating radar for the research of Medieval buried structures in Marche Region

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**Abstract.** A magnetic and Ground Penetrating Radar joint survey was carried out in the framework of the R.I.M.E.M. project that has the aim of supporting the archaeological prospections and drive the selection of the excavation areas related to the Late Roman Period and Early Middle Ages in the Central and Southern Italy. In particular, this papers deals with the magnetic surveys acquired near "Madonna della Valle" and GPR and magnetic joint surveys carried out in "Monastero" site. Most of magnetic maps carried out in "Madonna della Valle" site shown the absence of structured magnetic anomalies, despite of the presence of archaeological signs. Several hypothesis were given to explain this evidence.

Joint interpretation performed in "Monastero" site shown more intense magnetic anomalies related with shallower reflections due to probably to buried pipes. Other reflections are related with magnetic anomalies compatible with archaeological targets, but some significant reflections do not correspond to any magnetic anomaly, indicating magnetic method could be "blind" respect the archaeological target.

New field surveys including the electrical resistivity tomography could be carried out in order to overcome these acquisition and interpretation difficulties.

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