

### Geophysics in archeology

Geophysical prospecting methods are increasingly used in archeology. The measurements are carried out non-destructively at the surface. Large areas can be explored efficiently. With the geophysical results, archeological excavations can be planned and performed precisely. With our professional equipment we are able to provide the optimum method for each case.

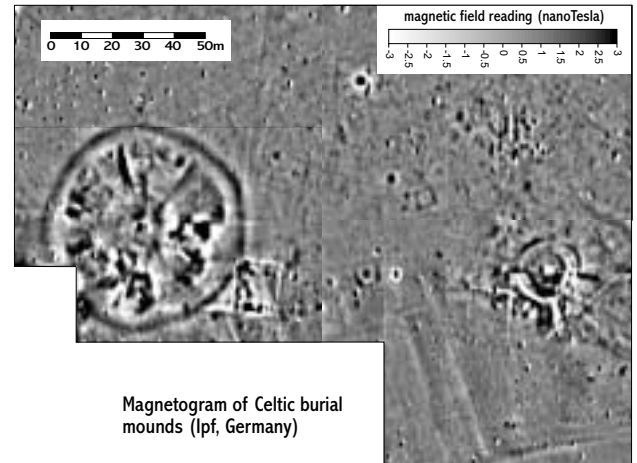
### FEREX 4-probe gradiometer

Since 2006 we own the state-of-the-art gradiometer system Ferex which simultaneously measures 4 traces at a distance of 0.5m. The system allows to explore up to 2 hectares per day (20.000m<sup>2</sup>, 16 readings/m<sup>2</sup>).



FEREX 4-probe gradiometer in the field

The new generation of sensors are no more affected by temperature drift. The vertical distance of the fluxgate probes of 0.65m provides enhanced depth penetration and resolution.

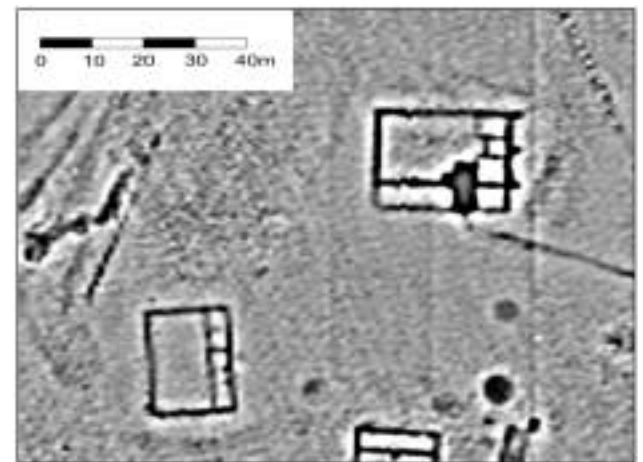


### Resistivity mapping

The electric resistivity of the ground is measured by geoelectrical methods. Resistivity mapping is used in addition or alternatively, i.e. when magnetometry does not provide clear results. Remnants of walls and foundations are detected by anomalies of higher resistivity. We use the device RM15 of Geoscan Research. Per day up to 0.5 hectares can be explored.



Geoelectric mapping in Panama

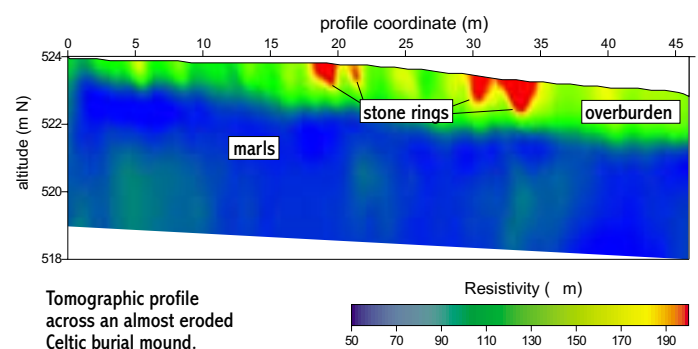


### Geoelectric tomography

Geoelectric tomography is measured along profiles. It is used as an additional tool, i.e. to resolve higher depths and vertical resolution.



Geoelectric tomography over paved ground

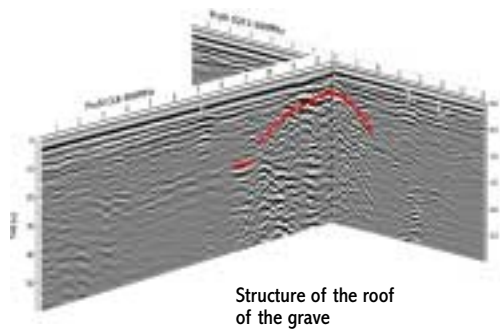


### Ground Penetrating Radar (GPR)

In special cases GPR is a successful tool. It is used for depth resolution and on sealed ground in towns and within buildings.

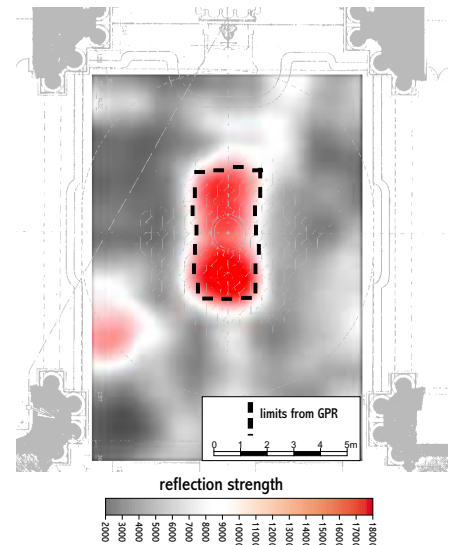


GPR inside the monastery Zwiefalten



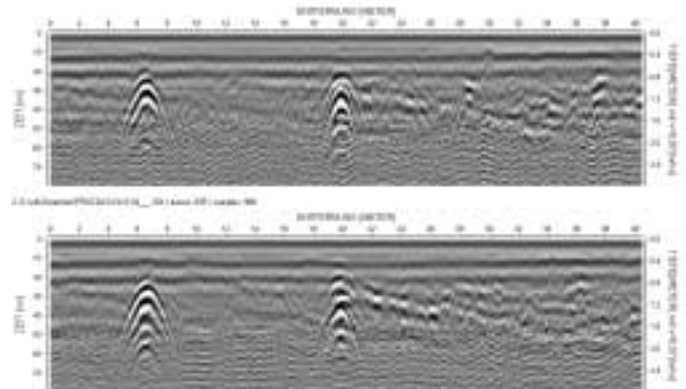
Structure of the roof of the grave

GPR: Detection of a hidden grave (void) in a monastery ( Zwiefalten, Germany)



GPR survey

Our state-of-the-art radar system works with shielded and unshielded antennas from 50 to 500MHz.



Roman foundations in the radargram, parallel profiles (Osterholz, Germany)

### Our geophysical devices

- 4-probe gradiometer Ferex, Institut Dr. Förster, Reutlingen
- 1-probe-gradiometer FM36, Geoscan Research, U.K.
- resistivity meter RM15, Geoscan Research, U.K.
- geoelectric multi-electrode system with 80 electrodes
- ground penetrating radar system Ramac/GPR, shielded and unshielded antennas, 50-500 MHz
- differential GPS



Magnetometry in Austria

### Selected references

Landesdenkmalamt  
Baden-Württemberg

detection of Medieval monastery remnants, Brackenheim  
 survey at the Roman Limes at Rainau  
 survey at a Roman castle at Böbingen  
 survey at a Roman villa rustica at Großbottwar  
 survey at a Roman villa rustica at Neuhausen, Fildern  
 survey of Celtic burial mounds at Ipf, Aalen  
 survey of iron-aged remnants at Unterriffingen  
 survey of Germanic settlements at Königshofen  
 detection of Medieval foundations  
 survey of Celtic settlements at Rottenburg  
 survey of a bronze-aged settlement  
 GPR survey around the cathedral of Ulm  
 survey in the Roman workshop quarter  
 survey of Alamaniian grave yards  
 detection of Alamaniian graves  
 Celtic burial mounds  
 survey at medieval castle ruin Löffelstelz

Landesdenkmalamt, Freiburg  
 Landesdenkmalamt, Tübingen

Münsterbauamt Ulm  
 Archäologischer Park Xanten  
 Tiefbauamt Kirchheim / Teck  
 Tiefbauamt Weinstadt  
 Tiefbauamt Nagold  
 Stadt Mühlacker

Stadt Öhringen  
 Stadt Buchen i. Odenwald  
 Stadt Albstadt  
 Staatl. Vermögens und Hochbauamt  
 Gemeinde Kirn-Land (Rheinland-Pf.)  
 Stadt Arnsberg (Nordrhein-Westf.)  
 Gemeinde Hüttlingen bei Aalen  
 St. Anna Stift, Freiburg  
 Infraseriv GmbH (Frankfurt)  
 Interessengem. Burg Falkenstein  
 Montafoner Museen, Österreich  
 Gemeinde Dellach, Österreich  
 Fachhochschule Lübeck  
 Fachhochschule Lübeck  
 Universität Tübingen  
 Universität Tübingen  
 Universität Tübingen

remnants of Roman settlements  
 detection of a Roman villa rustica  
 survey around a Roman castle  
 survey around the Roman Limes  
 Celtic burial mounds  
 Medieval castle ruins  
 detection of the Roman limes  
 search for Medieval monastery foundations  
 search of a Roman road  
 search of a suspected tunnel  
 investigation of settlements, Austria  
 archeologic excavation Gurina, Austria  
 Villa Hadriana, Tivoli, Italy  
 settlement of Tall Hujayrat al-Ghuzlan, Jordania  
 investigation of stone-aged settlements  
 archeologic excavation Troia, Turkey  
 archeologic excavation Panama Vieja, Panama