Continuous multi-signal EMI survey in geoarchaeology
a 90 ha dataset

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Geoarchaeological field evaluation

What?
Evaluate archaeological potential
Need for archaeological excavations?

When?
Public & large-scale development

How?
Intensive auger survey
Large-scale trenching campaigns
High local resolution
Low cost-time benefit
Low sampling density (10%)

Proximal soil sensing?
Magnetometer
Ground Penetrating Radar (GPR)
Electromagnetic Induction?

Mobile multi-signal EMI survey

Mobile:
High & time-efficient sampling rate
Multi-signal:
ECa + MSc

Dualem 21-S

Multi-coil:
Different soil volumes
Evaluating a 90 ha site
Koksijde: Development of a 90 ha golf course

Multi-coil EMI: mapping a 90 ha site

ECa mapping: landscape & archaeology
Site 1: ditch systems, enclosed site, small creeks

ECa mapping: landscape & archaeology
Site 1: modelling ECa at different depth intervals
ECa mapping: landscape & archaeology

Site 1: excavation of a moated medieval site

ECa mapping: landscape & archaeology

Site 2: mapping & modelling a palaeoriver channel

ECa mapping: landscape & archaeology

Site 2: creating a two-layer depth model

MSa mapping: archaeology & warfare

Site 3: battlefield archaeology
MSa mapping: archaeology & warfare

Site 3: battlefield archaeology

Artillery trenches

Site 3: WWI aerial photography

Shell impact craters

MSa mapping: archaeology & warfare

Site 3: WWI aerial photography

Evaluating mobile multi-signal EMI in geoarchaeology

Mobile multi-signal EMI:
an integrated geoarchaeological survey

- High sampling density
- Lateral and vertical discriminating potential
- Combining landscape & archaeology

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