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**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

Geoarchaeological field evaluation

How?
Intensive auger survey
Large-scale trenching campaigns





High local resolution
Low cost-time benefit
Low sampling density (10%)

Geoarchaeological field evaluation

Proximal soil sensing?

Magnetometer
Ground Penetrating Radar (GPR)




Electromagnetic Induction ?

Mobile multi-signal EMI survey

Mobile:
High & time-efficient sampling rate

Multi-signal:
ECa + MSa

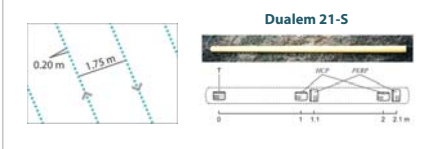


Multi-coil:
Different soil volumes

Mobile multi-signal EMI survey

Mobile:
High & time-efficient sampling rate

Multi-signal:
ECa + MSa



Dualem 21-S

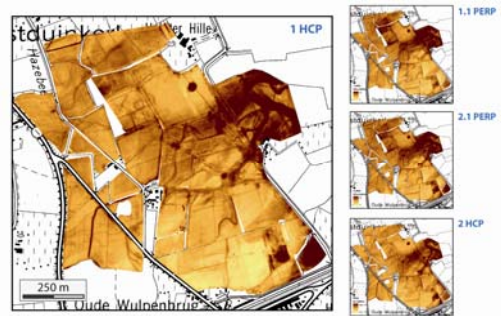
Multi-coil:
Different soil volumes

Evaluating a 90 ha site

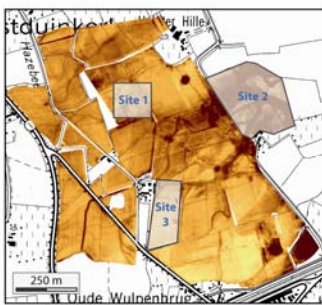
Koksijde: Development of a 90 ha golf course



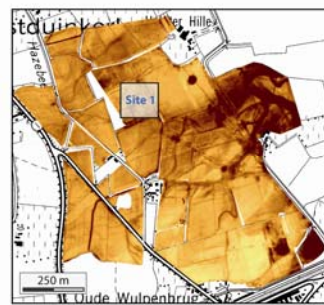
Multi-coil EMI: mapping a 90 ha site



Multi-coil EMI: mapping a 90 ha site

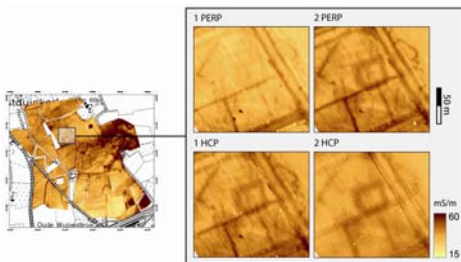


Eca mapping: landscape & archaeology



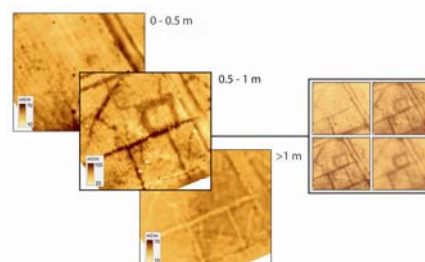
Eca mapping: landscape & archaeology

Site 1: ditch systems, enclosed site, small creeks



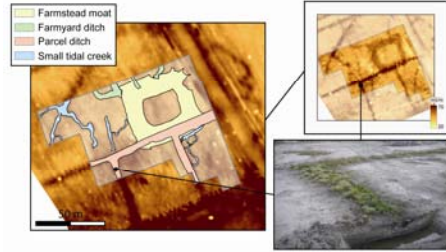
Eca mapping: landscape & archaeology

Site 1: modelling Eca at different depth intervals



ECa mapping: landscape & archaeology

Site 1: excavation of a moated medieval site

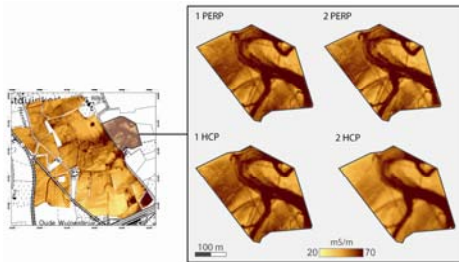


ECa mapping: landscape & archaeology



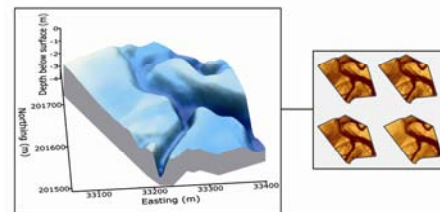
ECa mapping: landscape & archaeology

Site 2: mapping & modelling a palaeoriver channel

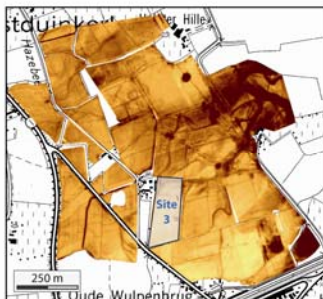


ECa mapping: landscape & archaeology

Site 2: creating a two-layer depth model

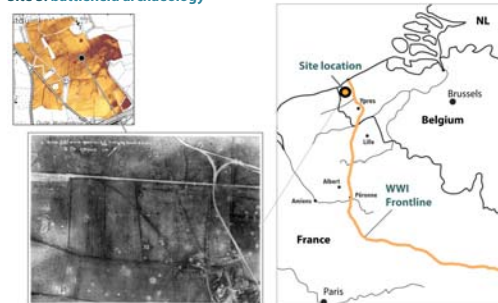


MSa mapping: archaeology & warfare



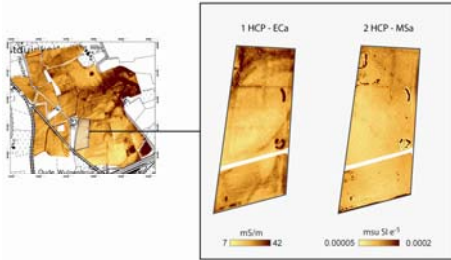
MSa mapping: archaeology & warfare

Site 3: battlefield archaeology



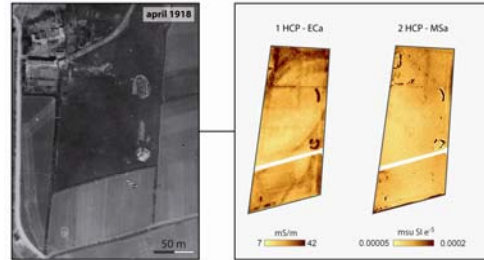
MSa mapping: archaeology & warfare

Site 3: battlefield archaeology



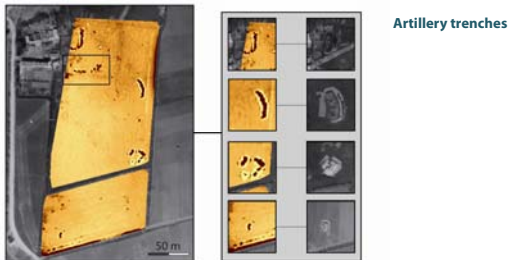
MSa mapping: archaeology & warfare

Site 3: WWI aerial photography



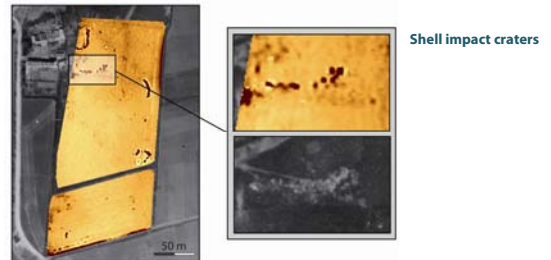
MSa mapping: archaeology & warfare

Site 3: WWI aerial photography



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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