Characterisation and monitoring of in-situ remediation of chlorinated hydrocarbon contamination using an interdisciplinary approach (MIRACHL)

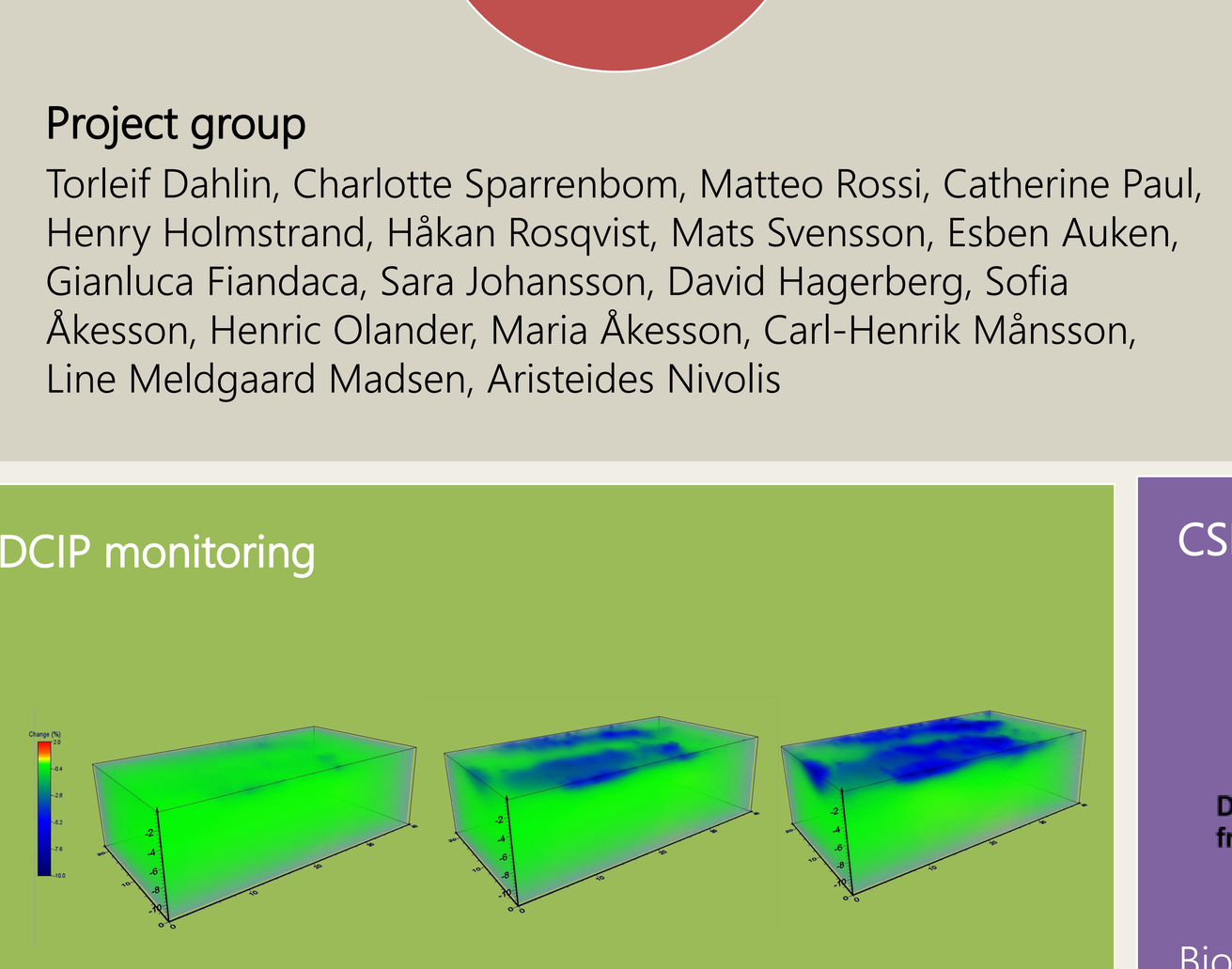
LUND UNIVERSITY

Background

- More than 2000 sites contaminated with chlorinated hydrocarbons in Sweden
- Main remediation technique: excavation and landfilling
- The Swedish EPA recommends the use of in-situ remediation methods, which would lead to large savings and environmental benefits – but limited acceptance due to lack of verification methods

MIRACHL project

Integrated monitoring with geophysical and biogeochemical methods is used to better understand and follow in-situ remediation processes at three different sites.



Project group

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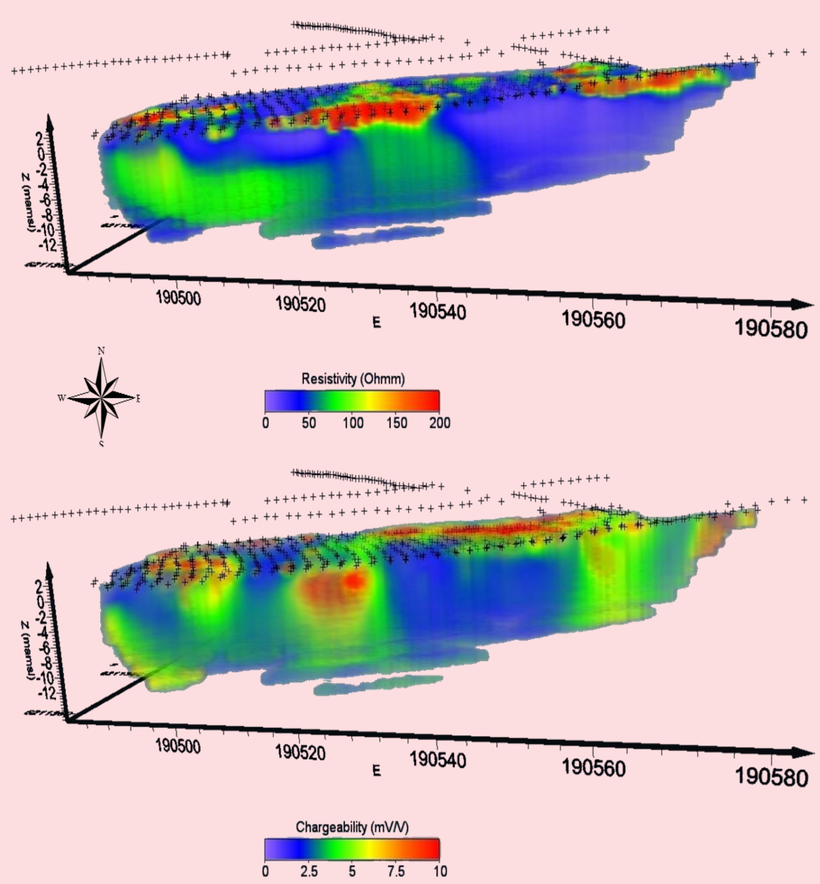
Direct Current resistivity and Induced Polarization (DCIP) tomography



DCIP tomography results in 3D models of different electrical properties in the subsurface: resistivity (top) and IP (bottom). This example shows results from a site contaminated with chlorinated hydrocarbons.

PBGC

- Microbiological sampling
- Groundwater sampling
- Contaminant sampling

DCIP monitoring

DC resistivity moniting results showing the infiltration of rain into the unsaturated zone as decreasing resistivity (blue).

CSIA

Biodegradation of chlorinated hydrocarbons

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