

TRAINING PROGRAMS

IN FRANCE OR AT CUSTOMERS' SITE:

GEOPHYSICAL PROCEDURES EQUIPMENT OPERATION DATA INTERPRETATION

STANDARD RESISTIVITY training program

a) principles of electrical methods:

- relation between resistivity and geological formations
- principle of Schlumberger 1D sounding

b) operation of SYSCAL resistivimeters:

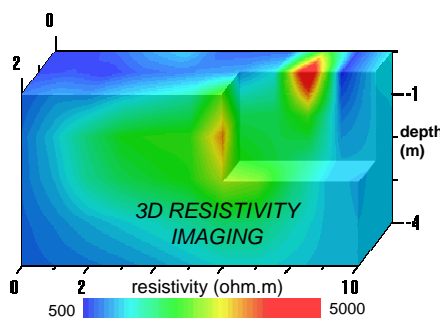
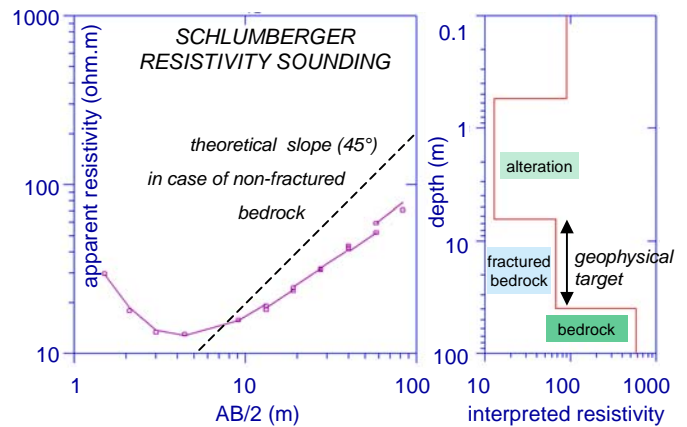
- quality control, stacking process
- field measurements on test site: handling of wires, electrodes, role of ground resistance, safety rules ...

c) interpretation of electrical soundings:

- principle of equivalence
- use of 1D inversion software for depth interpretation
- examples of applications in various geological areas

d) maintenance of equipment:

- trouble detection, first level repair of SYSCAL units



RESISTIVITY IMAGING training program

a) principles of electrical methods:

- relation between resistivity and geological formations
- principle of 2D and 3D multi-electrode measurements
- resistivity monitoring (4D measurements)

b) operation of SYSCAL resistivimeters:

- sequence creation with ELECTRE II and III software
- quality control, stacking process
- use of PROSYS software for data display & filtering
- field measurements on test site: handling of wires, electrodes, role of ground resistance, safety rules ...

c) interpretation of resistivity images:

- use of 2D/3D inversion for depth interpretation
- examples of applications in various geological areas

d) maintenance of equipment:

- trouble detection, first level repair of SYSCAL units

MAGNETIC RESONANCE training program

a) principles of the magnetic resonance method:

- relation between MRS and hydrogeological parameters
- principle of depth sounding with MRS
- conditions of application of the MRS method

b) operation of NUMIS systems:

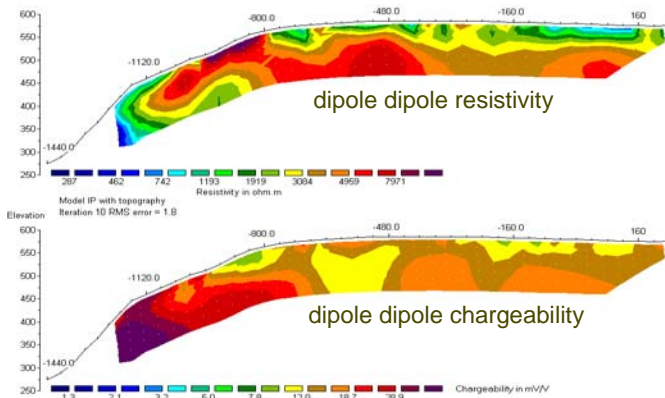
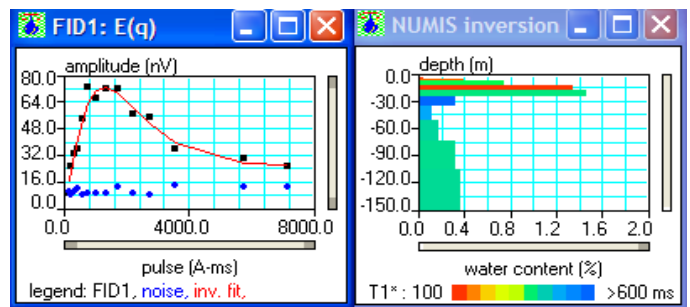
- measurement of Earth's magnetic field
- choice of the loop shape
- use of PRODIVINER software to control the acquisition parameters: frequency, stack number, pulse moments
- field measurements on test site: wire setup, control of quality of the MRS signal, safety rules ...

c) interpretation of MRS soundings:

- use of the 1D SAMOVAR software for interpretation of porosity and permeability of layers with depth
- examples of hydrogeological applications in various contexts: alluviums, deeper aquifer, fractured formations

d) maintenance of equipment:

- trouble detection, first level repair of NUMIS units



INDUCED POLARIZATION training program

a) principles of induced polarization methods:

- relation between chargeability & geological formations
- main electrode arrays for IP measurements

b) operation of VIP transmitters & ELREC receivers:

- specifications of the motor generator for the VIP
- control of output power, voltage & transmitted current
- safety rules for the operator and the field crew
- synchronisation of the ELREC receiver, quality control through the stacking process and the standard deviation

c) interpretation of resistivity & IP sections:

- examples of applications in various geological contexts
- use of 2D inversion software for depth interpretation of resistivity and chargeability anomalies

d) maintenance of equipment:

- trouble detection, first level repair of VIP transmitters and ELREC receivers



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