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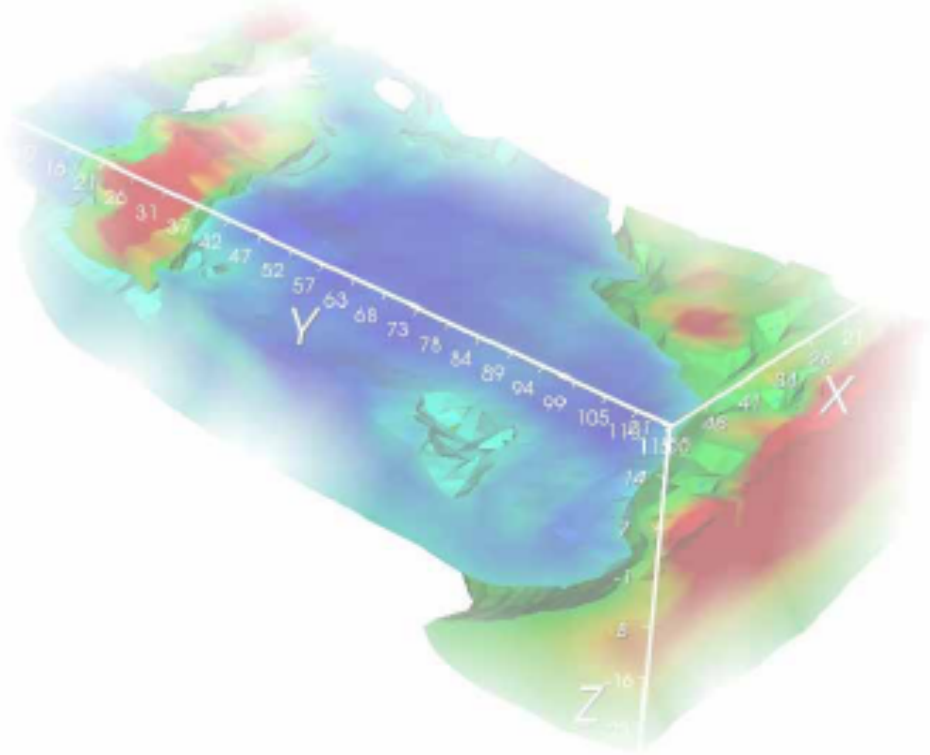
3D ELECTRICAL RESISTIVITY/IP TOMOGRAPHY INVERSION SOFTWARE



ERT Lab

Terraplus Inc.
120 West Beaver Creek Rd, Unit #15
Richmond Hill, ON, Canada, L4B 1L2

terraplus.ca
1.905.764.5505
sales@terraplus.ca

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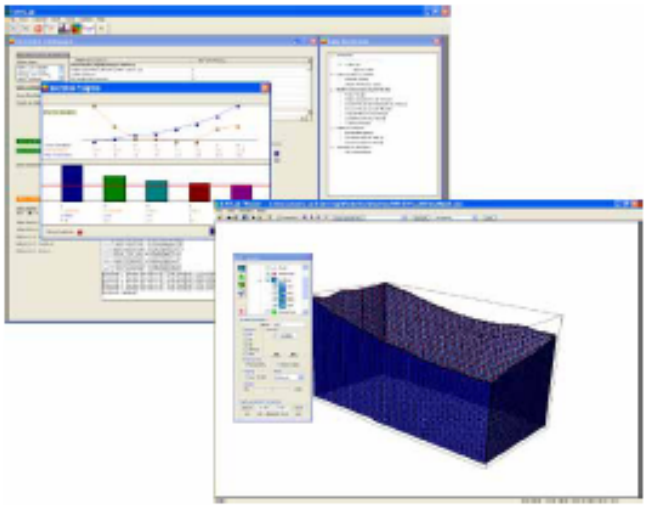

ERTLab Solver

ERTLab *Solver* is the resistivity and IP inversion module that offers full **three-dimensional topographical modelling and inversion**. Its numerical core based on tetrahedral FEM allows inputting of complex topographic information and inverting data sets collected using **surface, borehole and surface-to-hole** array configurations.

Inversion

- ✓ Smoothness constrained least-squared inversion
- ✓ Robust inversion (data variance iterative reweighting)
- ✓ Controllable parameters
  - Forward solver accuracy
  - Boundary conditions (Neumann, Dirichlet, mixed)
  - Regularization factors
  - Roughness functions weights
  - Noise estimates

Survey Design

- ✓ Resistivity/IP 3D forward modelling from generic sequences
- ✓ Analysis and display of sensitivity functions
- ✓ Interactive definition of the starting model

Mesh generation

- ✓ 3D complex topography
- ✓ User defined mesh
- ✓ Mesh and model import/export tools

Data quality control

- ✓ Pseudo-plots view
- ✓ Graphic/numerical processing of bad data-points
- ✓ Reciprocal check

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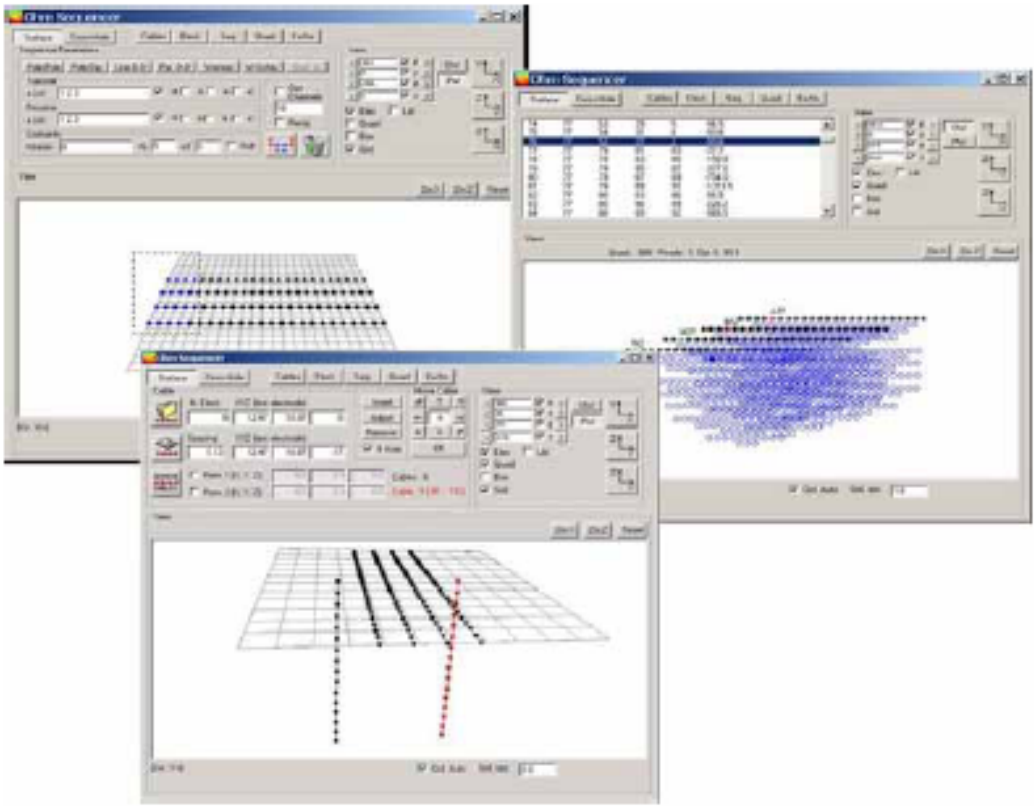
ERT Lab Sequencer



ERTLab *Sequencer* is a practical tool for the **creation of 2D and 3D arrays/schedules** of electrical resistivity measurements.

Cables/electrodes definition

- ✓ User-friendly interface to insert electrodes and cables
- ✓ Practical 3D view managing of the inserted objects
- ✓ Mouse controlled selection of the electrodes to be skipped or to be used in roll along mode

Sequence generation

- ✓ Sequence generator for 2D and 3D surface, borehole or surface-to-hole surveys (*Linear Dipole-Dipole, Parallel Dipole-Dipole, Pole-Dipole, Pole-Pole, Wenner, Wenner-Schlumberger*)
- ✓ Special environment for Multi-Borehole sequence creation
- ✓ Option to create mixed arrays by appending multiple sequences
- ✓ Multi-channel receiver optimization
- ✓ Geometric factor constraining
- ✓ Reciprocal quadrupole generation
- ✓ Different Import/Export formats (ElectreII, ErtLab Solver, text)
- ✓ Conventional pseudo-plots for displaying measurement coverage

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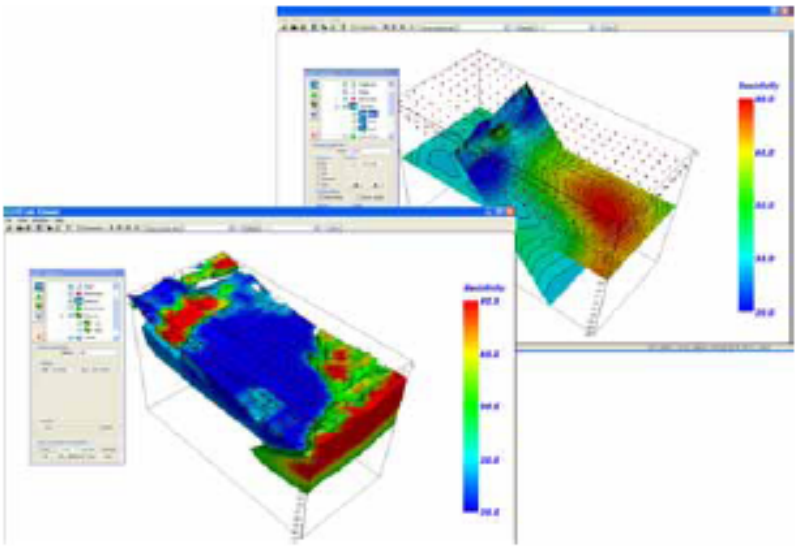
ERTLab Viewer



ERTLab *Viewer* is a **powerful graphical environment** to represent resistivity/IP models. Visualize inverse and forward models in a variety of ways, including sections, volumes and isosurfaces. These may be spun and re-oriented in real-time.

Display sections

- ✓ Display sections in xy, yz, xz plane
- ✓ Display sections in any generic direction of the space, by defining a point and a normal to the plane direction
- ✓ Three different modes to represent sections: contours (automatic or user-defined), cell scalars and node scalars

Volumes and isosurface extraction

- ✓ Plumes extraction (volumes)
- ✓ Isosurface definition

Color mapping

- ✓ Resistivity/conductivity switch
- ✓ Rainbow or red-blue, linear or logarithmic, regular or inverted colorbars

Advanced visualization properties

- ✓ Transparency, clipping on/off option
- ✓ Orthographic/perspective view
- ✓ Axes properties definition, labels editing

Export

- ✓ Export in bitmap format
- ✓ Load/save script file with session settings

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