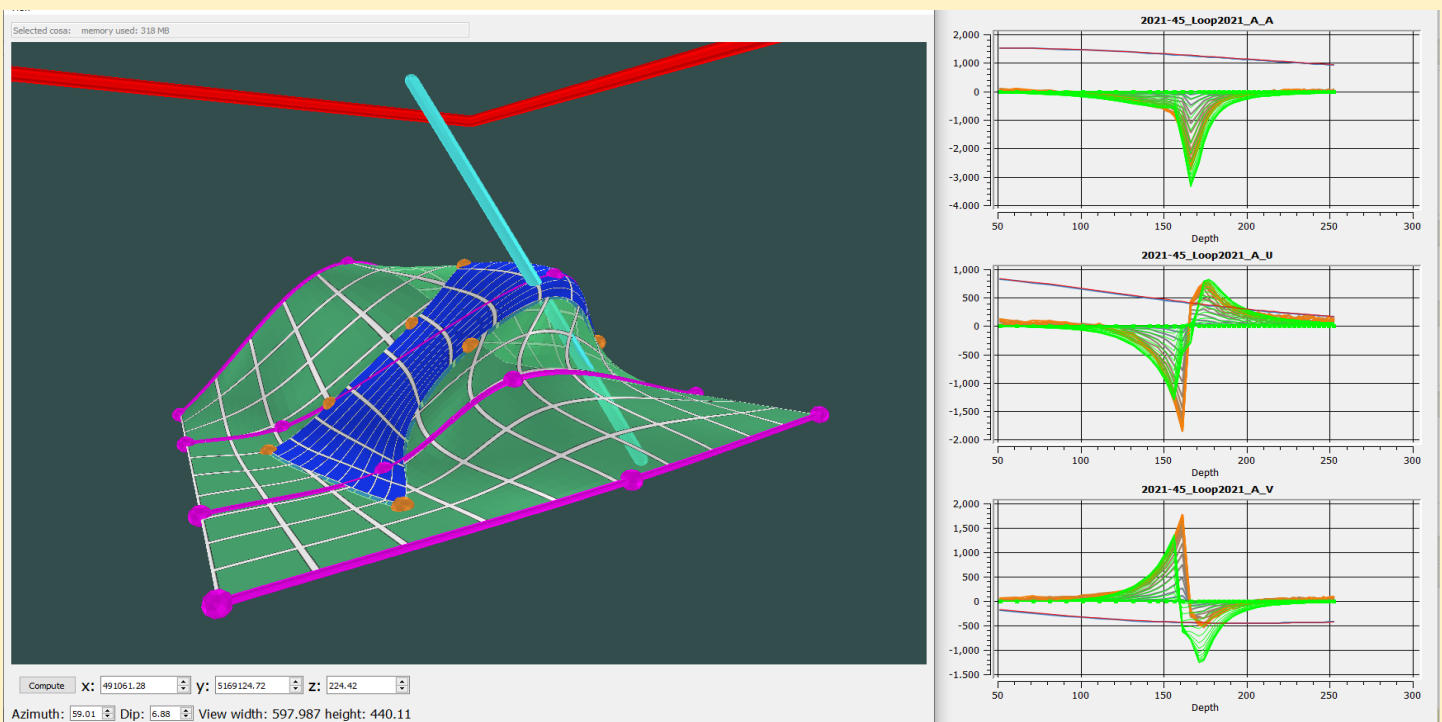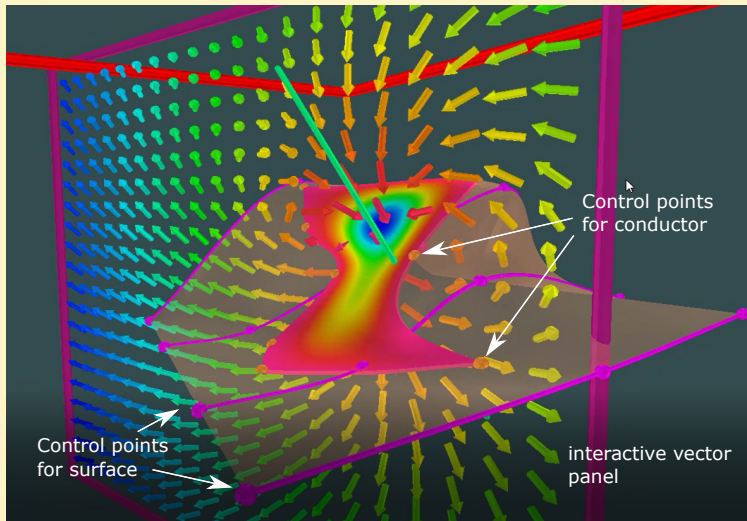# Provus

Advanced EM modelling for mineral exploration and resource definition

Novaminex

- Accurate EM simulation of multiple thin-sheet conductors of complex shape

- 3D environment and interaction tools for easy manipulation of conductor shape

- Simulation speed fast enough for interactive modelling (seconds per calculation) and parametric inversion

- User interface tools for managing a modelling project incorporating data spanning multiple loops, waveforms and channel sampling schemes

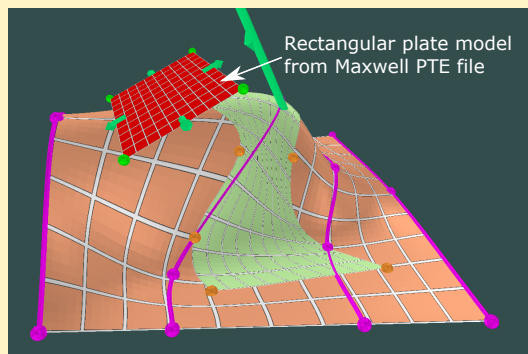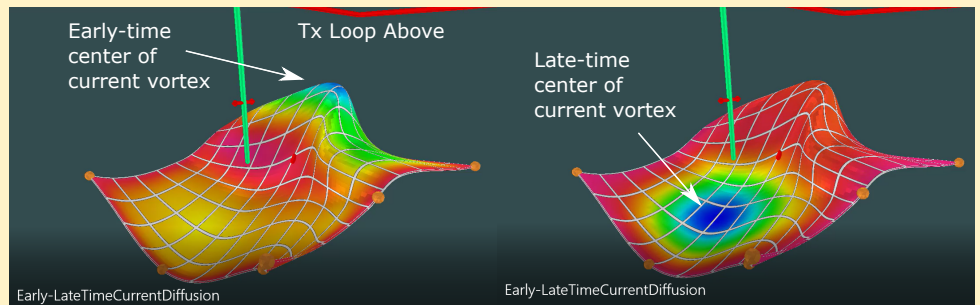- Seamless link to Geoscience Analyst

Provus makes it easy to simulate the EM response of mineral deposits using models that can have complex shapes better approximating deposit geometry. Provus uses Structured Deformable Sheets as the basis for computing the eddy currents induced on the conductor surface without the need to compute a regular triangulated mesh. Control points can be freely manipulated by the user allowing both the shape and the underlying mapping used by the EM calculation to change in "real time". Compare simulated responses to field data with sophisticated plotting tools. Set up the optimizer to automate the iteration of the locations of selected control points against the misfit between observations and computed responses. Understanding of the simulated fields is aided by visualization of the induced eddy currents on the conductors themselves and as vector panels displaying their primary, secondary or total magnetic fields. Any number of complex conductors can be modelled, allowing for the physical mutual interactions between them.

Control points for conductor

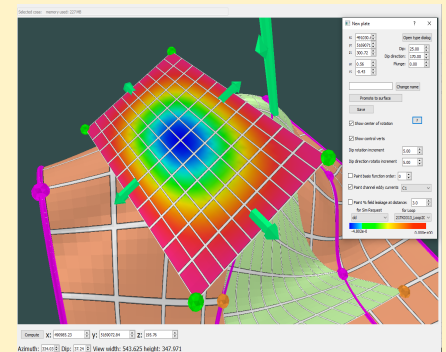Control points for surface

interactive vector panel

Provus provides for easy creation and manipulation of conductors of complex shape. Each conductor is defined by one set of control points/lines defining the surface in which the conductor exists and by a second set of control points defining the conductor locus within that surface. The computed response can be viewed as profiles along surface, in the air or down boreholes, as eddy current potentials painted on the conductor surface or as vector fields presented on interactive panels. Take advantage of the seamless link to Geoscience Analyst (GA) to have the project conductors updated continuously in a GA session.

Provus uses a "complete set" of continuous basis functions which allow the eddy current patterns to diffuse correctly between their early-time (inductive limit) state and their late-time (resistive limit) state.

Early-time center of current vortex

Tx Loop Above

Late-time center of current vortex

Early-LateTimeCurrentDiffusion

Early-LateTimeCurrentDiffusion

Rectangular plate model from Maxwell PTE file

Provus supports rectangular plate modelling. Initiate a plate model or load it from a Maxwell ".pte" file. Manipulate the plate interactively and co-simulate with other plates and/or Provus conductors. Promote a plate to a Provus conductor and begin to deform it into more complex shapes.

Put Provus to work on your exploration or resource definition projects:
Aquire a Provus licence on a subscritpion basis or
use Novaminex consulting services to model your EM data
www.novaminex.com
ben.polzer@novaminex.com; 1-705-507-0786

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