

Introduction to Model Building in EMIGMA

Project: Test_hole_4Hz /Data Set: L16HG-31_meas in Database: E:\interp\BHL\Utem4\Utem4_test.mdb

Database | Data Processing | Data Correction | Data Reduction

Projects in Database

- Rapriv
- Job 104
- Test_hole_4Hz**
- Test_Hole

Project ID: 2

Date Created: 1/23/2003

Project Name: Test_hole_4Hz

Change Name

Delete Project

Create Project

Surveys in Project

- L16HG-31**
- L16HG-31_backup

Survey Name: L16HG-31 Change

Survey ID: 16

Survey Comments

Add Survey

BackUP

Delete Survey

Data Sets in Survey

- L16HG-31_meas**

Data Set: Measured Data Set ID: 42

Domain Type: Time Date Created: 1/23/2003 1:17

Data Set: L16HG-31_meas Change

Model Name: Change

Data File Name: Utem4_test_42.dat

☐ Model

☐ Has Related Grid(s)

Configuration

Delete Data Set

Data Set Info

Responses: Freespace Total

Select your imported data
or your synthetic survey

Click the
Model button

For any EM/IP/MT survey first create a resistivity background

The screenshot shows the 'Layers' tab of a software interface. It features a table with columns for Layer Number (N...), Permeability, Resistivity, Permittivity, and Thickness. The table contains three rows of data. To the left of the table is an 'Edit Mode' section with buttons for 'Insert Layer', 'Replace Layer', 'Delete Layer', 'Undo Delete', 'Restore', and '<-- Import Layers'. To the right of the table is a 'Layer Parameters' section with input fields for 'Layer #', 'Resistivity', 'Relative Permeability', 'Relative Permittivity', 'Thickness', and 'Susceptibility'. Further to the right are several configuration sections: 'Configuration' with 'Survey Name' and 'Model Name' fields; 'Total Number of Layers' with a value of 3; 'Depth' with 'Top Depth' and 'Bottom Depth' fields; 'Cole-Cole Polarization Mode Parameters' with a checkbox and three parameter input fields (C, M, T); and 'Resistivity & Susceptibility Grid Data Files' with a 'View' button.

N...	Permeability	Resistivity	Permittivity	Thickness
1	1	1e+009	1	1e+008
2	1	50	1	10
3	1	3000	1	1e+007

Edit Mode

Insert Layer

Replace Layer

Delete Layer

Undo Delete

Restore

<-- Import Layers

Layer Parameters

Layer # 3

Resistivity 3000

Relative Permeability 1

Relative Permittivity 1

Thickness 1e+007

Susceptibility 0

Configuration

Survey Name: L16HG-31_meas

Model Name:

Total Number of Layers 3

Depth

Top Depth -10

Bottom Depth -1e+007

Cole-Cole Polarization Mode Parameters ☐

C (exponent) parameter 0

M parameter (chargeability) dimensionless 0

T (time constant) parameter seconds 0

Resistivity & Susceptibility Grid Data Files

View

Add layers — remember the top layer is not assumed to be an air layer but this is default.

Insert a Prism/Plate or Sphere geometry

Model Configuration

Prisms/Plates/Polyhedra | Layers

N...	Resistivity	Susceptibility	Permittivity	Algorithm	Anomaly Name	File Name
1	0	0	1	VHPLA...	NCT3	

General Info

Survey Name: main target 30000 v

Model Name: main target 30000 v

Number of Models: 1

Edit Mode

Insert Target

Replace Target

Import Target

Import Topography

Import Voxel Model

Shift Target

Delete

Undo Delete

Restore

Target Properties

Target #: 1

Target Name: NCT3

Resistivity(Ohm.m): 0.0002

Conductance: 50

Permeability: 1

Permittivity: 1

Susceptibility: 0

Density (g/cm³): 0

Cole - Cole

C (exponent) dimensionless: 0

M (chargeability) dimensionless: 0

T (time constant) seconds: 0

Export

View

Model

☐ Prism

☒ EikPlate

☐ Poly

☐ Sphere

Scat. Algor.

☐ LN

☐ TLN

☒ VH

☐ FS

Internal Current Sampling

Number: 441

Advanced

Interactions

Rotation (degree)

Euler Angles

1st: 92

2nd: 22

3rd: 0

Geological Angles

Strike: -2

Dip: 22

Plunge: 0

Center/Top Location

X: 677499.3

Y: 6122942.74

Z: -5

☐ Center

☒ Top

Scale Factor (m)

Strike Length: 500

Dip Extent: 500

Thickness: 0.01

Poly Filename

Import Polyhedra

OK

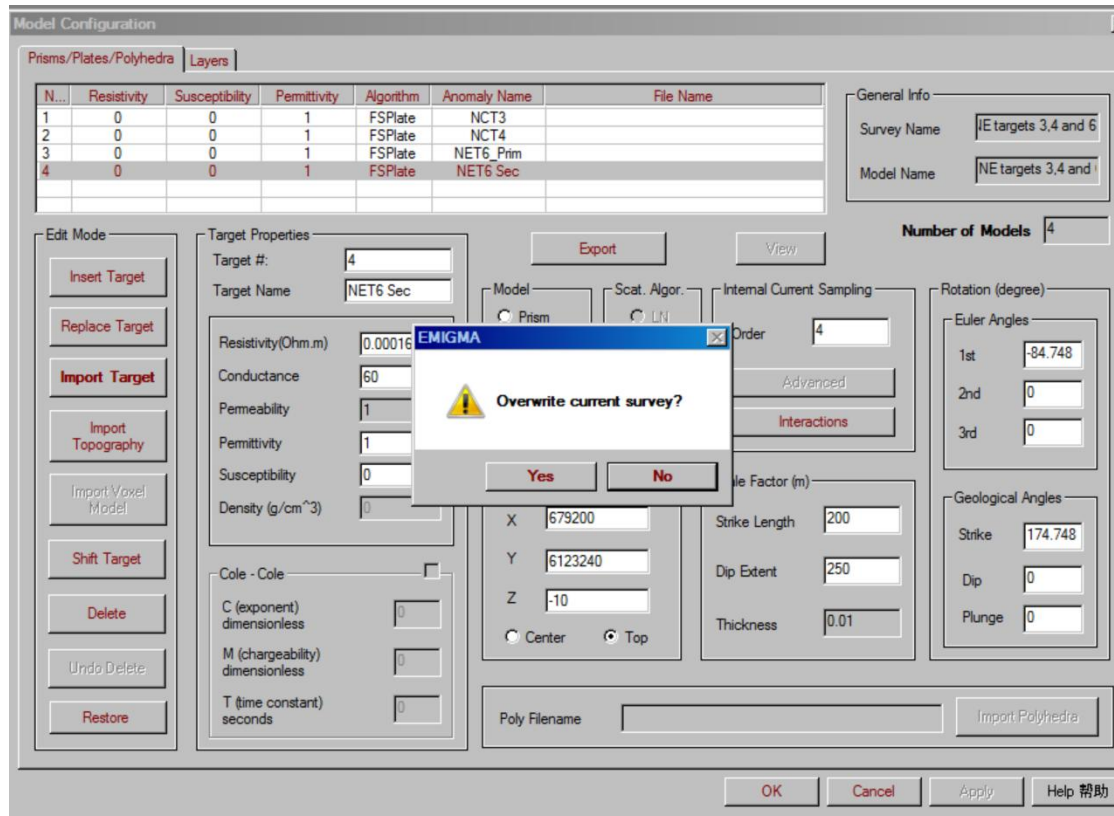
Cancel

Apply

Help 帮助

Insert a 3D model

Adjust and Insert additional anomalies as required

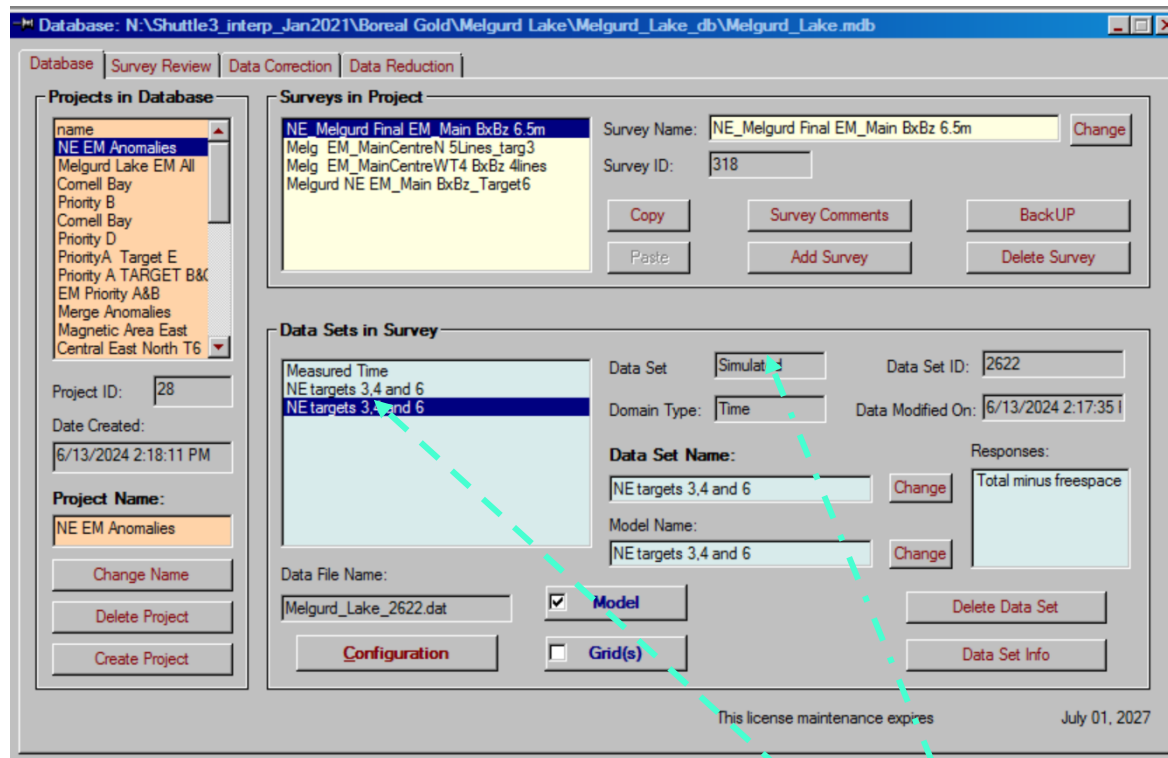


If you click “OK”, then the message will ask you to “APPLY”



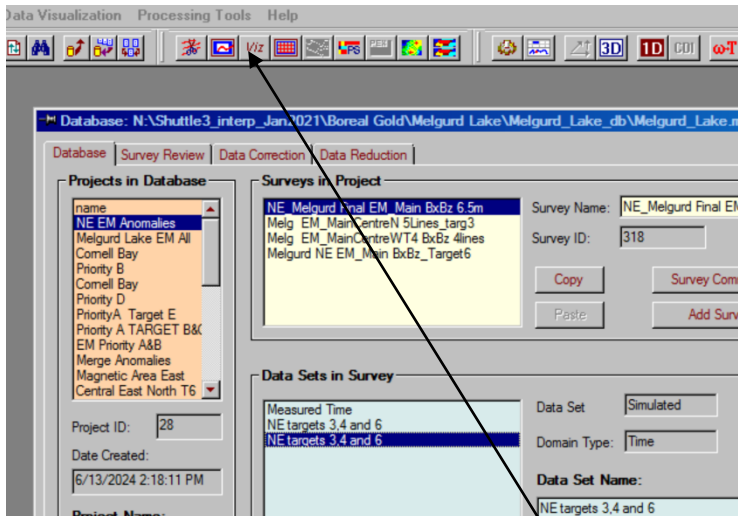
If you are editing a previous model, you may not want to overwrite.

Observe a new dataset within your Survey



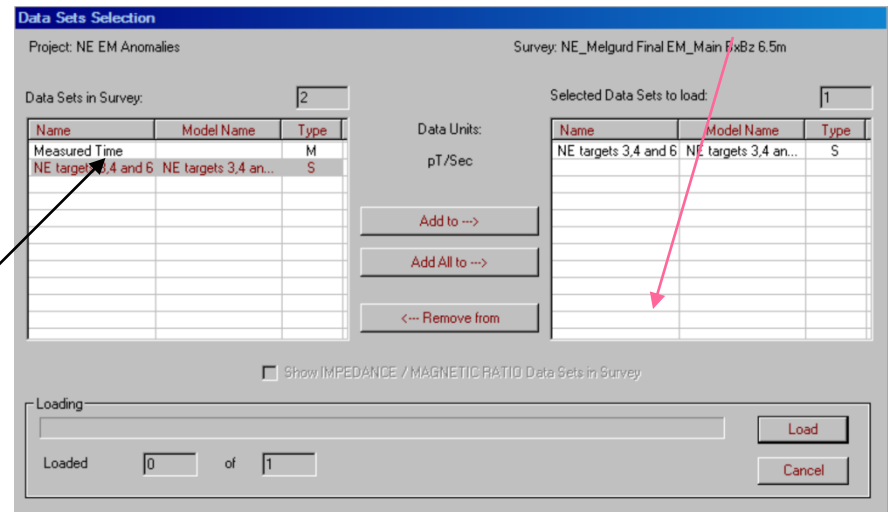
After selecting Apply then you will see a new data set which is a “simulated data set” and is attached to the measured data. This dataset has all the parameters of your measured data such as data stations, survey system, waveform, etc. There is no need to specify anything additionally before simulating your model.

Open model in Visualizer to check and adjust the model

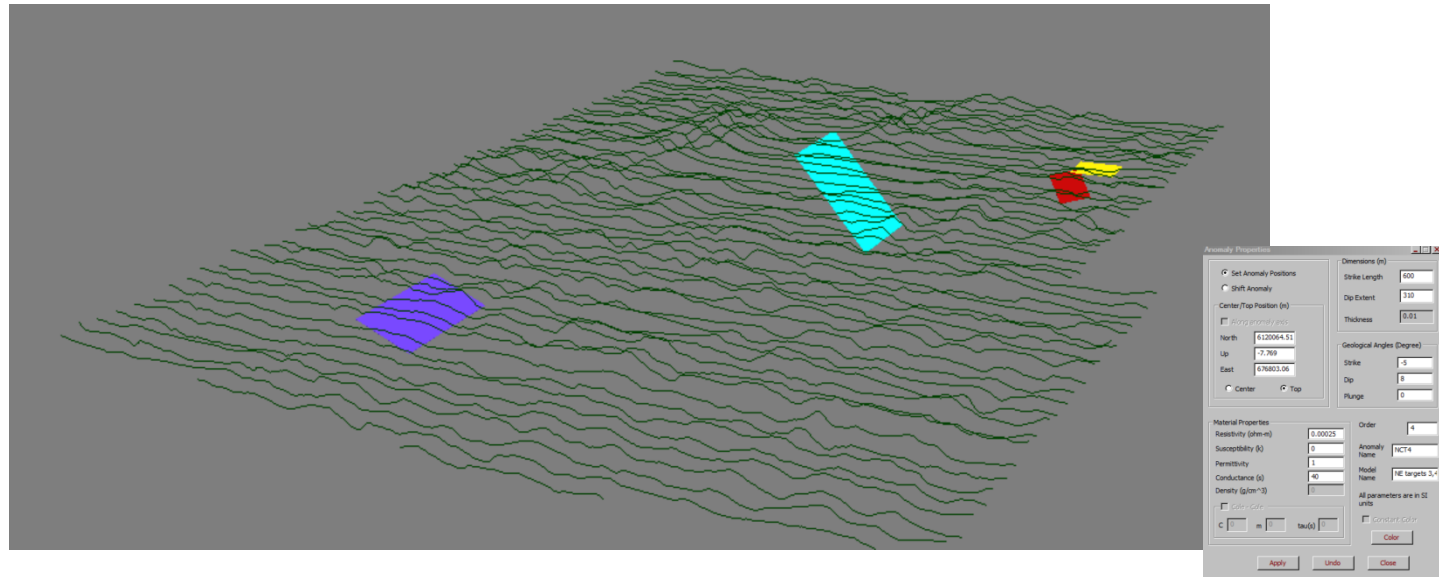


Select the new dataset and then
Select Visualizer

You may also load the measured
data if you wish to view the data
in relation to the model.



View in Visualizer to adjust as required



You can now use the tools to view your 3D object in the Visualizer and you may edit each target and view the changes.

Save to database before exiting. It is possible to save to a new data set or to overwrite the old data set.

