

Extract GM-SYS 3D Models

In order to visualize the structure of models using variable property distributions within layers, GM-SYS 3D has a tool for displaying vertical cross-sections through your 3D model at any azimuth. You may also extract data along a section and create a GM-SYS Profile model for editing.

Extracting a 2-D Cross Section

In order to visualize the density structure of models using vertical and lateral property distributions, GM-SYS 3D has a tool for displaying vertical cross-sections of your 3D model at any location and azimuth.

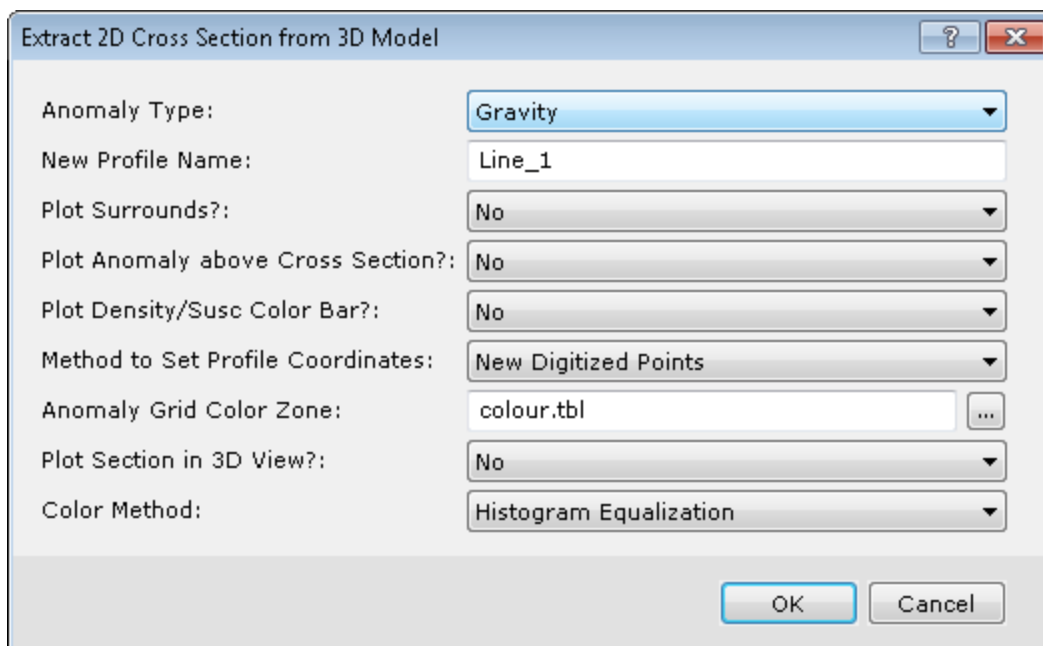
The *Extract 2D Cross Section* function displays a vertical slice through a 3D model with density or susceptibility displayed as a grid. Calculated and observed anomaly profiles may optionally be displayed above the section. Cursor position is displayed as model X, Y, and Z-coordinates at the bottom-right corner of the Oasis montaj window. The property section grid may optionally be displayed in the 3D View of the model.

You may generate an unlimited number of cross sections as long as you give them unique names. Using the same name as an existing section will replace the existing section. All of the cross section information is stored as a line in an Oasis database named <model name>_prof.gdb. After adding the line to the database, the database is iconized in the upper-left corner of the Oasis window.

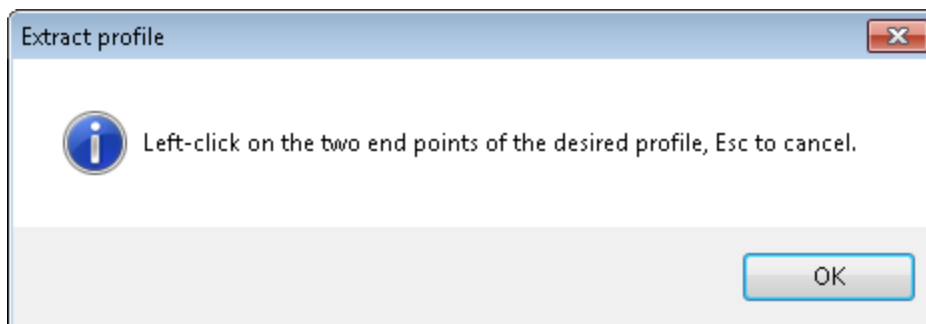
To Extract a 2D Cross Section

Before you begin, confirm that a 2D plan map is the current map.

1. On the *Display* menu, select **Extract 2D Cross Section**. The *Extract 2D Cross Section from 3D Model* dialog appears.



2. From the drop-down list, select the *Anomaly Type* of magnetic or gravity. The default is gravity.
3. Specify the *New Profile Name* and location. The default value is "Line_1".
4. From the drop-down list, select *Plot Surrounds* to draw a box around the profile map. The default is no.
5. From the drop-down list, select *Plot Anomaly above Cross Section* to plot Observed/Calculated Anomaly curves in a separate profile box above the density/susceptibility profile map. The default is no.
6. From the drop-down list, select *Plot Density/Susc Color Bar* to plot horizontal density/susceptibility colour bar above the anomaly profile box or above the density/susceptibility profile map, if no anomaly profile is desired. The default is no.
7. From the drop-down list, select the *Method to Set Profile Coordinates*. The options are New Digitized Points or Previous Points/Manual Input. The default is New Digitized Points.
8. Specify the *Color Zone*. This is the colour zone file for colouring the anomaly grid cross section, and optionally, the horizontal anomaly colour bar. The default is *colour.tbl*.
9. Select to *Plot Section in 3D View*. The default is no.
10. Select the *Color Method* for the cross-section grid. The options are Histogram equalization (new default), Normal distribution, linear, default, or as last displayed.
11. Click **OK**. The *Extract profile* dialog appears.



12. Using left-click(s) set the beginning and ending points of the profile.
13. Click **OK**. The Cross Section appears in a new map document.

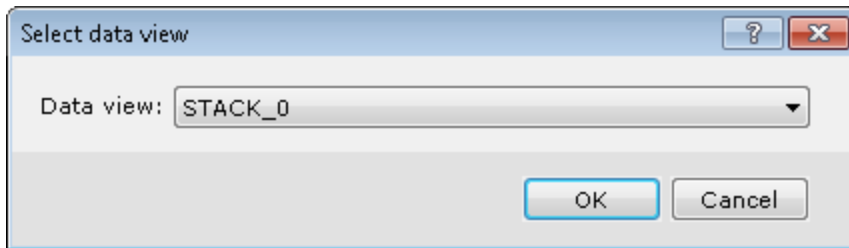
Changing Cross Section VE

This standard Oasis function allows you to change the X and Y scales of a view on the current map.

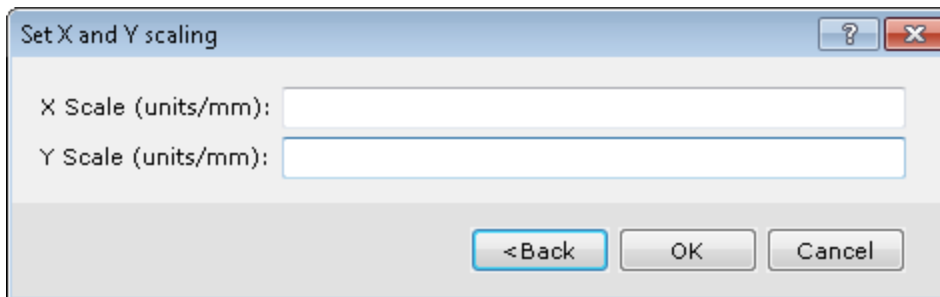
To Change the Cross Section VE

Before you begin, confirm the cross-section map is the current map.

1. On the *Display* menu, select **Change Cross Section VE**. The *Select data view* dialog appears.



2. From the drop-down list, select the *Data view* "STACK_0" which contains the cross-section data.
3. Click **OK**. The *Set X and Y scaling* dialog appears.



4. Specify the *scaling*. Typically Y Scale will be an even multiple (vertical exaggeration) of the X Scale.
5. Click **OK**. The cross-section is rescaled within the map. You may need to redraw the map or select "Full View" to see the rescaled section in its entirety.

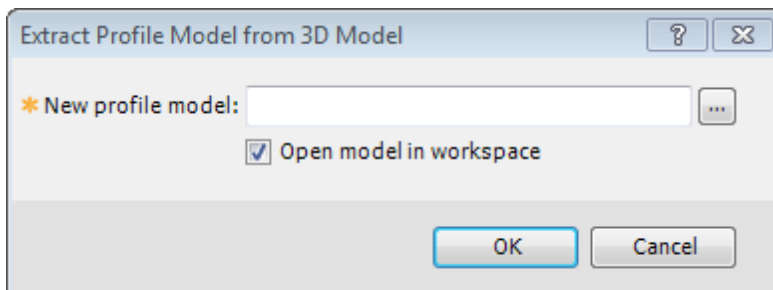
Extract GM-SYS Profile

Extract a GM-SYS Profile model along a digitized profile across the 3D model. The model is automatically generated from layer and survey information extracted from the model. After it is created, the model is added to the workspace and may optionally be opened in GM-SYS Profile.

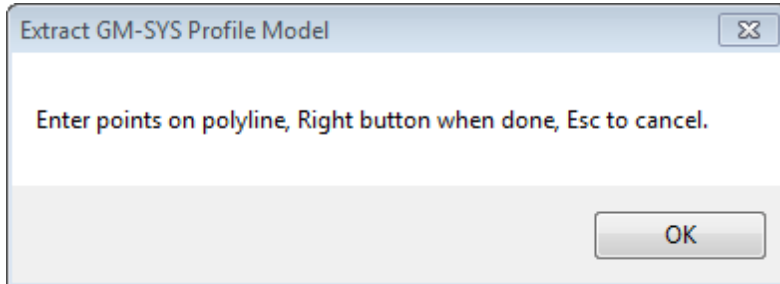
To Extract a GM-SYS Profile Model

Before you begin, confirm a 2D Plan Map from the 3D Model is the current map.

1. On the *Display* menu, select **Extract Profile Model from 3D Model**. The *Extract Profile Model from 3D Model* dialog appears.



- Specify the *New profile model* and the location, if outside the current project.
- Deselect the *Open model in workspace* checkbox if you don't want the model to be automatically opened in GM-SYS Profile.
- When complete, click **OK**. The *GM-SYS Profile Model* dialog appears.



- Using your mouse, select the end points.
- Right-click** to select *Done* when complete.



Due to differences between the GM-SYS 3D and GM-SYS Profile model structure, variable property distributions within layers are not supported in GM-SYS Profile. You may receive informational messages explaining the conversion from the GM-SYS 3D to GM-SYS Profile model structure.

- From the pop-up menu, select **Done**. The model opens in GM-SYS Profile.

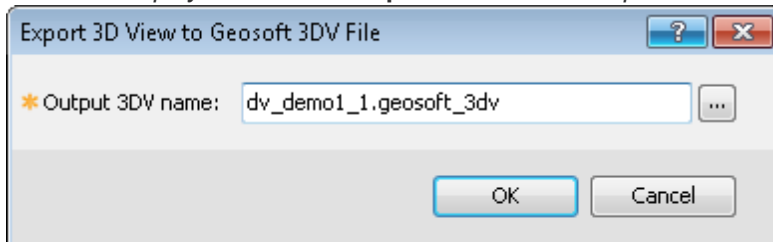
Export Model to 3DV

The embedded 3D viewer in the model document displays the current state of the model. If you wish to add external information to the display, you must first export the model information to a 3DV file (similar to a packed map), and Import Geosoft 3DV into a map.

The 3DV file contains all of the layer information that can be displayed in the embedded 3D viewer, including copies of the underlying files. This allows the 3DV to be shared, because it does not require access to the data on the original system.

To Export a Model to 3DV

- From the *Display* menu select **Export to 3DV**. The *Export 3D View to Geosoft 3DV File* dialog appears.



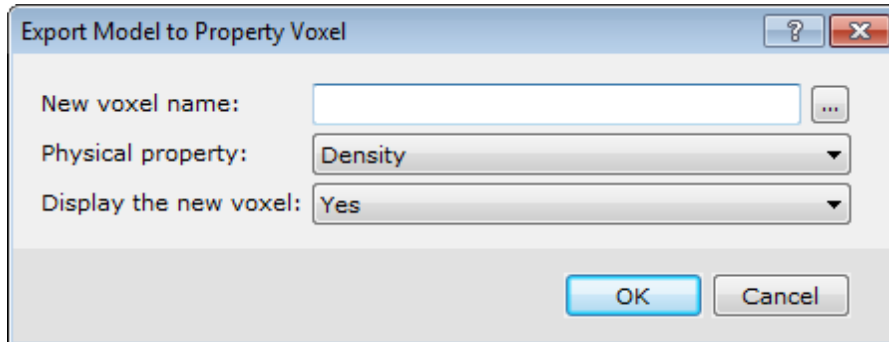
- Specify the *Output* file name and the location, if outside the current project.
- Click **OK**. The view is exported.

Export 3D Model to Property Voxel

This function creates a 3D grid (Geosoft voxel) of density or susceptibility from the current GM-SYS 3D model. The model is queried for the chosen physical property at each voxel location. The voxel extends from the observation elevation to the base of the model.

To Export a GM-SYS 3D Model to Voxel

1. On the Model menu, select **Export Model to Property Voxel**. The *Export 3D Model to Voxel* dialog appears.



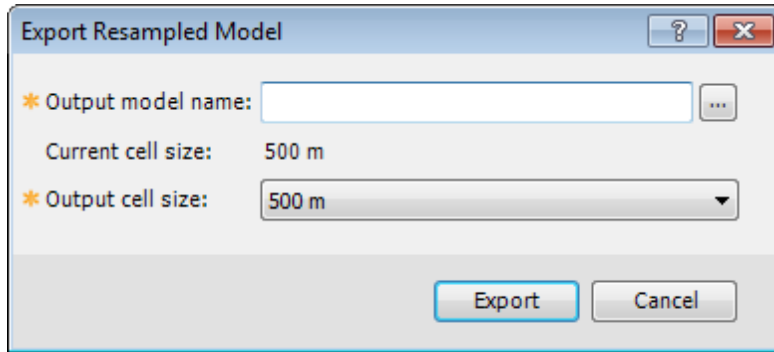
2. Specify the *New voxel name* and the location, if outside the current project.
3. From the drop-down list, select *Density* or *Susceptibility* for the **Physical Property**.
4. Select whether to **Display the new voxel**.
5. Click **OK**. The voxel is generated. If you selected 'Yes' above, the voxel is displayed in the 3D Viewer.

Export Resampled Model

This function generates a copy of the current model, rescaled by a factor X, such that the number of grid rows and columns in the output model is X times the number in the current model. The cell size in the output model is 1/X times the cell size in the current model. A factor greater than 1 results in a model with higher spatial resolution. For example, starting with grids of 100x100 cells of 250m and a factor of 0.5, the output model will have 50x50 cells of 500m. This proves useful in creating faster-calculating versions of large models, or allowing for higher-frequency detail in more simplified models.

To Export a Resampled 3D Model

1. On the *Model* menu, select *Save Model As* and **Resampled Model**. The *Export Resampled 3D Model* dialog appears.



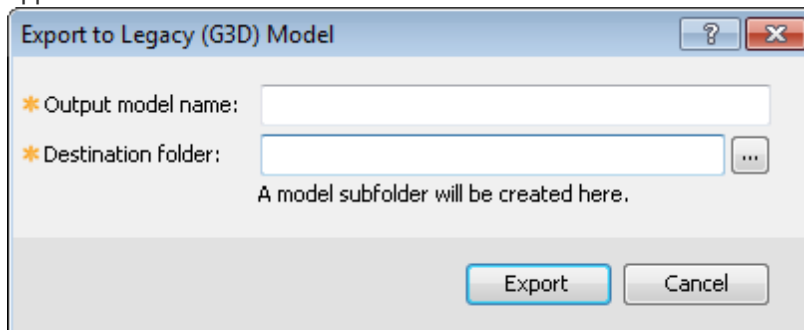
2. Specify the *Output Model Name* and the location, if outside the current project.
3. Select the **Output cell size** from the drop-down list.
4. Click **OK**. The model is exported to the designated location.

Export Model to Legacy (G3D) format

The GM-SYS 3D model document type is not recognized by Oasis montaj 7.5.1 and earlier. In order to use a model with these versions, you must save the model in the Legacy (G3D) format first. This process will decompose the model into individual grids, voxels, and other files and generate a G3D model file. The resulting directory may be moved to a different location or system where it may be re-opened using the older software.

To Export a Model to Legacy Format

1. On the *Model* menu, select **Save Model As** and **Legacy (G3D) Model**. The *Export to Legacy (G3D) Model* dialog appears.



2. Specify the *Output model name*.
3. Browse to select the *Destination folder*. A subfolder will be created in the selected location.
4. Click **Export**. The model is exported in legacy format.

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