



Oasis montaj How-To Guide

Set Earth Parameters in GM-SYS[®] Profile



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Please send comments or questions to info@geosoft.com

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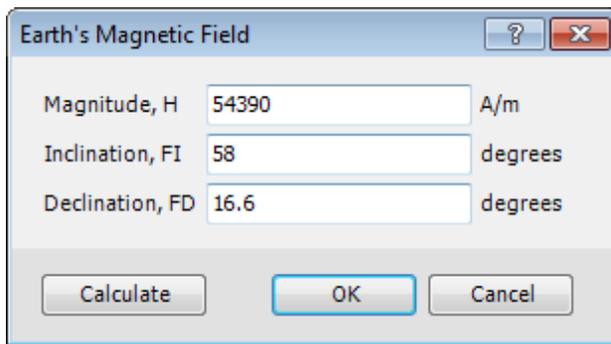
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Set Earth Parameters

Use the *Earth's Magnetic Field* dialog to input the Earth's magnetic field intensity, inclination, and declination at the location and date of your survey and model. The Earth's field varies with position and time, so the correct location and date of the magnetic survey must be used to properly calculate the field parameters. Use IGRFPT to calculate the intensity, inclination, and declination of the geomagnetic field for any point and elevation on the earth, for any date from 1945 to the present.



Parameter	Value	Unit
Magnitude, H	54390	A/m
Inclination, FI	58	degrees
Declination, FD	16.6	degrees

GM-SYS[®] Profile defaults to values of 0 gammas, 0°, and 0° for the magnetic field intensity, field inclination, and field declination, respectively, so that no anomaly is calculated until you enter valid values. The *Earth's Magnetic Field* dialog will be opened each time you open the model until the field intensity is non-zero.

This option may also be accessed from the Magnetic Anomaly pane pop-up menu.

Earth's Magnetic Field

GM-SYS[®] Profile requires the magnitude and orientation of the Earth's field at the location and time of the survey you are trying to model, in order to calculate the magnetic response of the model correctly. When you import magnetic data, you must enter values for the Earth's field parameters. Models that have the Earth's field magnitude set to zero will be prompted to enter a value each time the model is loaded, unless you opt to turn off the warning.

-  *It is possible to get a calculated model response with a field magnitude of zero and the field orientation defined, if any blocks in the model have non-zero remanent magnetization.*
-  *Use the Compute Single Point GRF Values dialog to calculate the magnitude and direction of the Earth's field at the location and time of the survey you are trying to model.*

To Set Earth Parameters

1. Enter the *Magnitude* of the field, in the specified units. Units may be changed in the *Display* menu.
2. Enter the *Inclination* of the Earth's field, in degrees from horizontal.

3. Enter the *Declination* of the Earth's field, in degrees from True North.
4. If you don't know these values, but know the latitude, longitude, and elevation of your model location and the date it was collected, click the **Calculate** button which opens the *Compute Single Point GRF Values* dialog.

The screenshot shows a dialog box titled "Compute Single Point GRF Values". It contains the following fields and controls:

- IGRF/DGRF:** A dropdown menu currently set to "IGRF".
- Date required (yyyy/mm/dd):** A text input field containing "2011/12/13".
- IGRF Model Year (ignored for DGRF):** A dropdown menu currently set to "auto".
- Longitude (-180 to 180):** A text input field containing "0".
- Latitude (-90 to 90):** A text input field containing "0".
- Elevation (metres):** A text input field containing "0".
- Field Strength (nT):** An empty text input field.
- Inclination (degrees):** An empty text input field.
- Declination (degrees):** An empty text input field.

At the bottom of the dialog are two buttons: "Calculate" and "Close".

5. Enter the appropriate values and click **Calculate** to calculate the field parameters. If the observed magnetic data were corrected using an IGRF model, specify the IGRF Model Year.
6. Click **Close** to leave the IGRFPT dialog. These parameters will be captured in the *Earth's Field* dialog for your model.
7. Click **OK** to close the dialog.