# Add a Magnetic Survey in a GM-SYS 3D Model

Adding a Magnetic Survey to a model requires defining the measurement locations in X, Y, and Z, specifying a background susceptibility for the survey, and optionally providing a grid of observed magnetic values.

A survey consists of X,Y,Z locations and background properties. In practical terms, this might mean an airborne survey that measured the total magnetic field anomaly. Observed data are not required; a theoretical model could be constructed to determine the sensitivity of a particular survey configuration to a specific target.

To Add a Magnetic Survey

1. From the *Survey* menu, select **Add Magnetic Survey**.
   The *Add Magnetic Survey* dialog will appear:
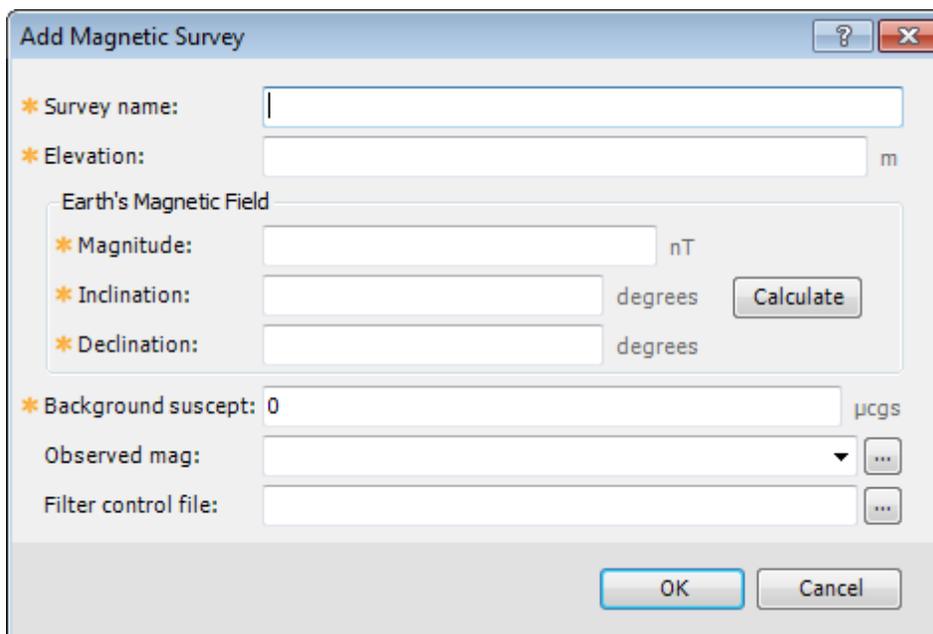
2. Enter a descriptive *Survey name*. This is used to differentiate the surveys in a model.

3. Enter the constant *Elevation* of the survey in the indicated units.

4. Enter the *Earth's Magnetic Field* parameters for the survey time and location.

   You may calculate these parameters by clicking the **Calculate** button and entering the appropriate survey information and clicking **Calculate** in the dialog. Then click **Close** to close the dialog and the values will be copied into the appropriate fields in the *Add Magnetic Survey* dialog.

5. Enter a *Background susceptibility* for the model, in µcgs units. In most cases, this will be the default value, 0.0.

6. Browse to select the grid containing the *Observed Magnetic Anomaly* values for your survey.

7. Browse to select the *Filter control file* used to filter the observed data, if any. The same filter will be applied to the calculated model response.

8. When you have defined the survey to your satisfaction, click the **OK** button.

   If all of the inputs pass validation, the survey will be added to the model and its properties displayed. If any of the inputs fail validation, you will be allowed to correct the inputs.

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