Author: **Ambogo Guindo at BHP International**

You may have sample locations with valid easting and northing coordinates, but no elevation value. The elevations for these points may be interpolated from an existing elevation grid in order to allow proper placement in three dimensional space.

Procedure:

The *INVERSE, KRIGE,* and *TRIGRID* programs are all estimators which can be used to estimate values at a point location (in addition to the more common usage of estimating values for grid cells). In the following example, the *INVERSE* program is used to calculate the elevation for geochemical samples which had seatings and northing but no elevations.

In this case there is a FLAT table with the fields *sample_x, sample_y,* and *sample_z* and a CELL table with an estimated elevation called *elev_inv*. The following menus must be filled in:

Fields

Data points		Results	
Value:	***elev_inv***	**Value:**	***sample_z***
X:	***CELL_xc***	**X:**	***sample_x***
Y:	***CELL_yc***	**Y:**	***sample_y***

Where *CELL_xc* and *CELL_yc* are the automatic coordinate fields from the CELL table. Note that this is "backwards" from the normal case of using point locations for the *Data points* coordinates, and a CELL table field for the *Results*.

Search

Max samples: ***4*** Min samples: ***4***

Search	U-axis	V-axis	W-axis
	Length: ***150***		

The Maximum and Minimum samples can be low numbers, since the data has is evenly distributed on the grid. By requesting four samples, we are specifying the four grid values surrounding each point location. The Search Length should be slightly larger than the diagonal of the grid cells. The formula used to calculate the length is:

$$\text{length} = \sqrt{(\text{CELL\_csz}^2 + \text{CELL\_rsz}^2)}$$

Where *CELL_csz* is the column size and *CELL_rsz* is the row size. The default for the V-axis is the same as the U-axis, resulting in a circular search.

Parameters

Inverse-distance power: ***1***

Inverse-distance power should be entered as one, which will estimate the point values using bi-linear interpolation.

You are now ready to estimate.

See Also:

Inverse(1mo)
Krige(1mo)
Trigrid(1mo)