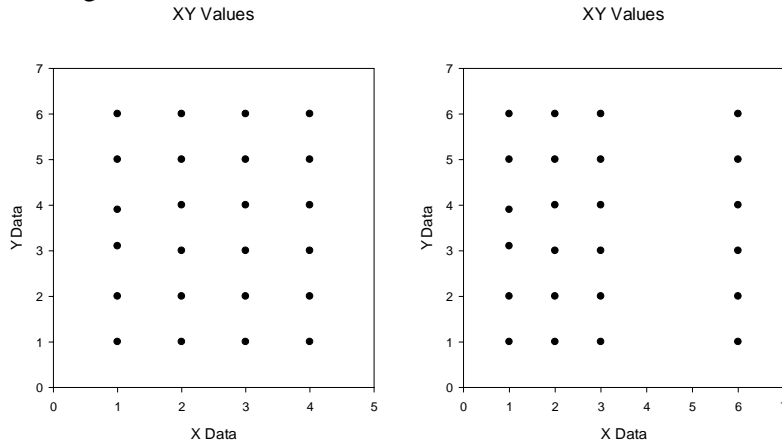


Interpolation issues with Mesh and Contour graphs.

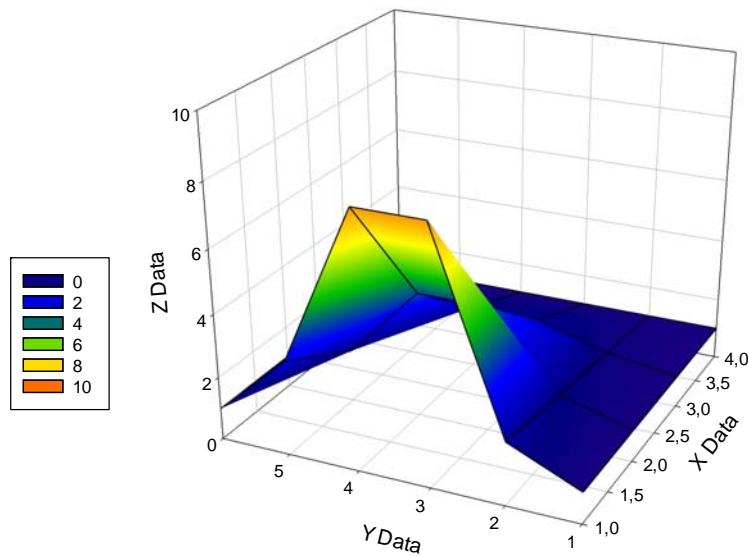
When SigmaPlot graphs a mesh or contour graph, if the X and Y data forms a regular matrix, the graphs are usually as expected. When the X and Y values are not so spaced, SigmaPlot interpolates values, and can give unexpected results. This article covers other options for generating data for these graphs.

The regular matrix mentioned looks like this... or this:



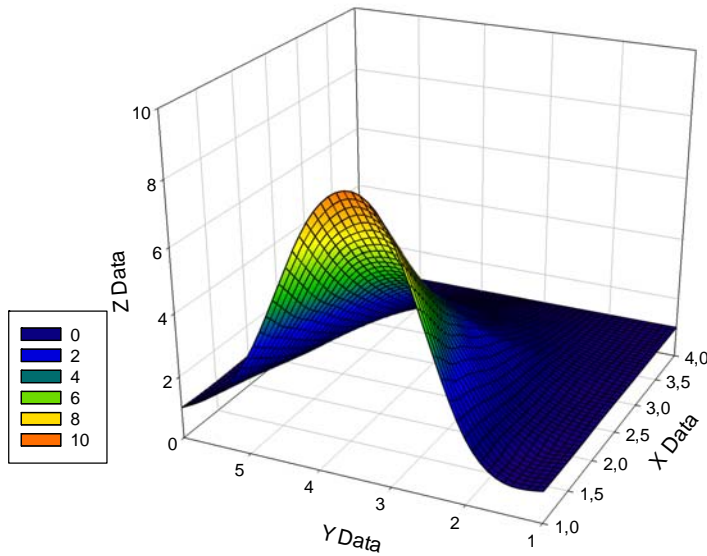
The spacing is not important, but the values must be the same, and all present. When this is so, we get a graph as below:

3D Graph 2



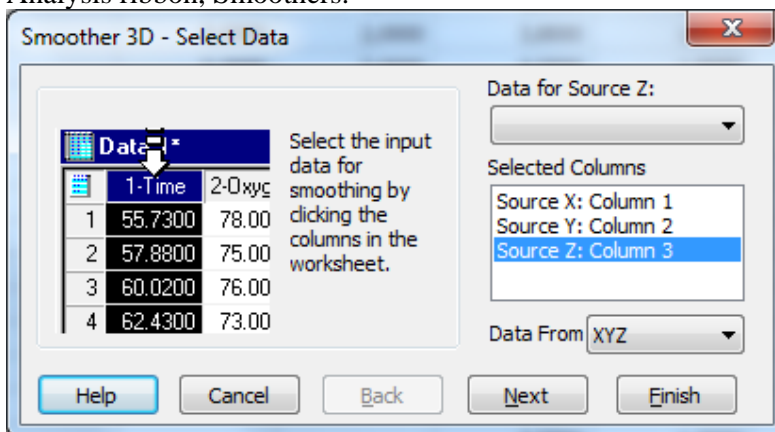
If there is any dither in the X or Y values, SigmaPlot will interpolate, defaulting to 24 intervals in X and Y:

### 3D Graph 3

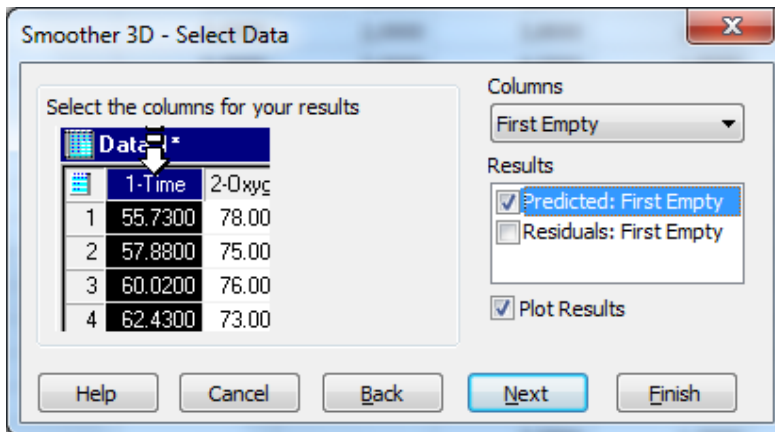


In this example, two of the Y values deviated by 0,01. The interpolation pushes the highest point on the graph above any measured values. This can be extreme when there is much deviation in all of the data.

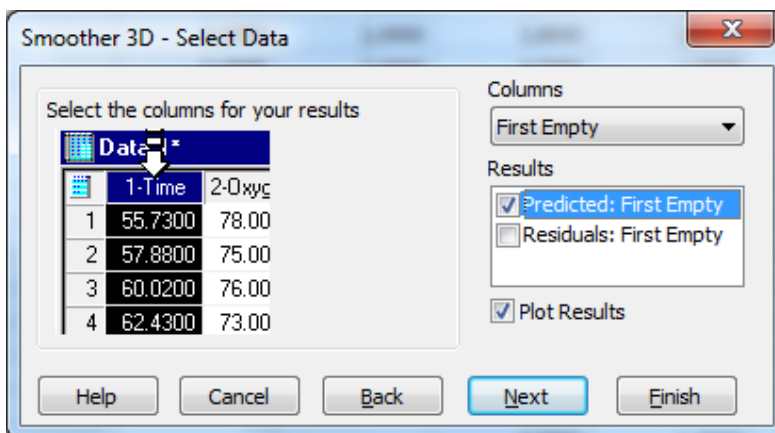
To get a result closest to the top graph in this article, we can use the Smooth 3D Data tool in the Analysis ribbon, Smoothers.



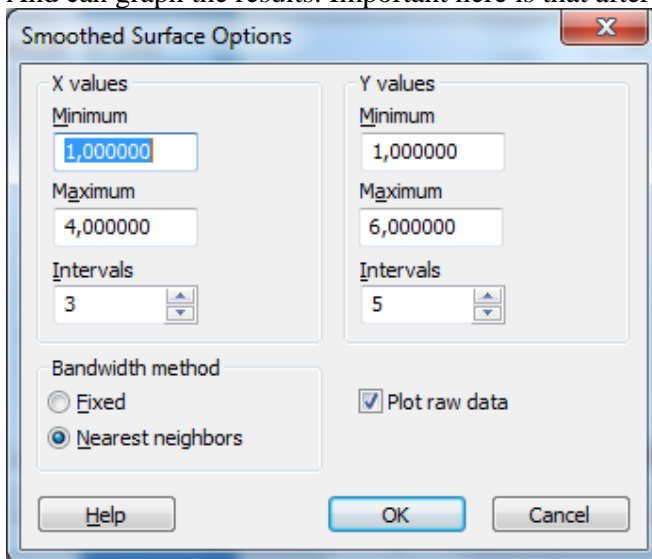
We select the Source Data



Save the predicted values

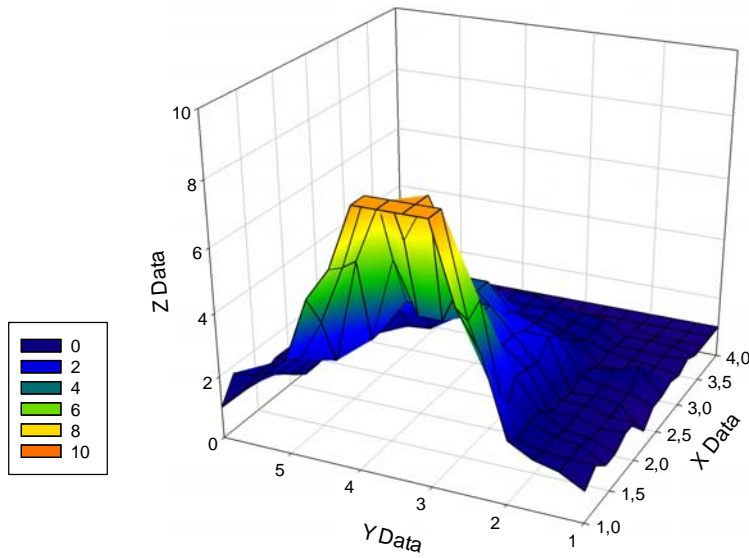


And can graph the results. Important here is that after clicking Finish, the Options are selected:



Below is a graph with the default intervals, but with Nearest neighbors selected:

### Nearest Neighbor smoothing



If the interval is set to closely match the original data, we get even closer to the top graph:  
Nearest Neighbors, match intervals

