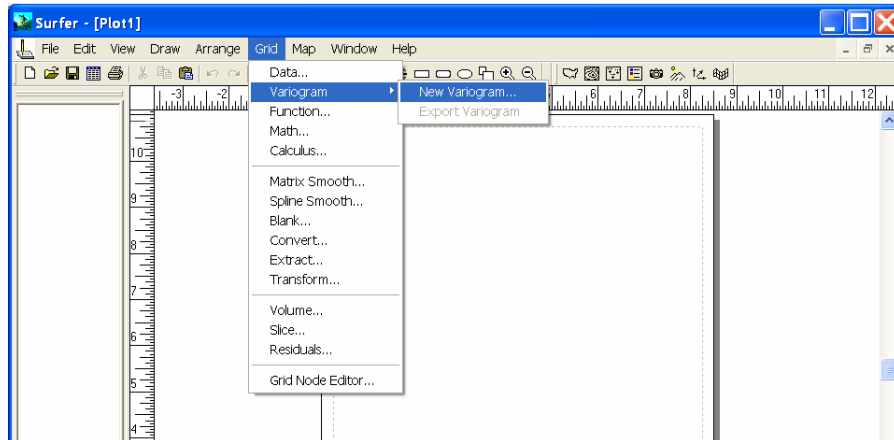


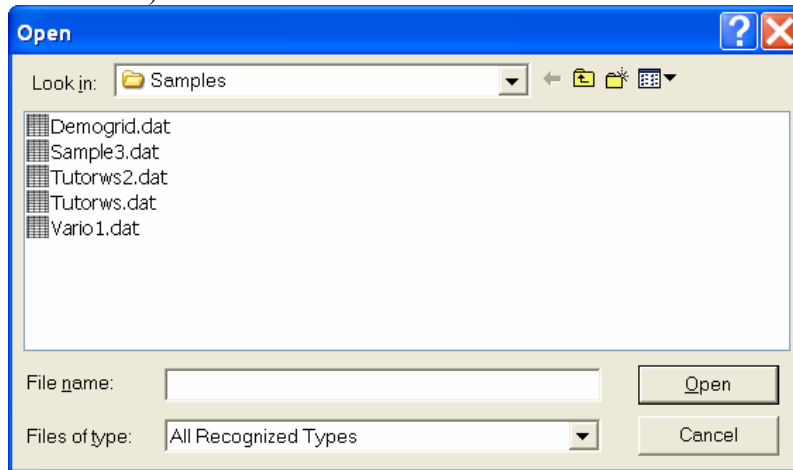
Variogram and Kriging in Surfer7

Variogram

1. From the menu, choose Grid > Variogram > New Variogram.



2. Select a data file from the Open dialog box. (For the demonstration purpose, Demogrid.dat is selected)



3. Set the data columns to use on the Data tab in the New Variogram dialog box, and select the variogram grid settings on the Options tab. (Use all the defaults)

New Variogram

Data | Options

Data Columns

X: Column A: Easting

Y: Column B: Northing

Z: Column C: Elevation

Duplicates

To Keep: All

X Tolerance: 0

Y Tolerance: 0

Data Exclusion Filter (eg. x=-999 OR y=-999 OR z=-999)

Update Statistics

Statistic	X	Y	Z
Active	47	47	47
Original	47	47	47
Excluded	0	0	0
Deleted Dup.	0	0	0
Retained Dup.	0	0	0

OK Cancel

New Variogram

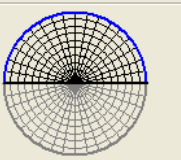
Data | Options

Variogram Grid

Max Lag Distance: 3.8

Angular divisions: 180

Radial divisions: 100



Detrend

Do not detrend the data

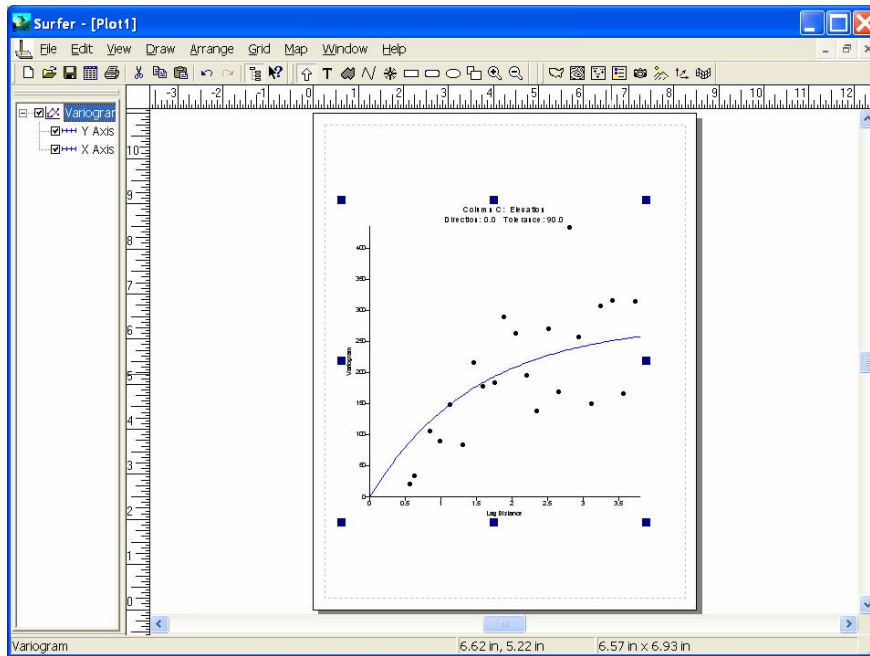
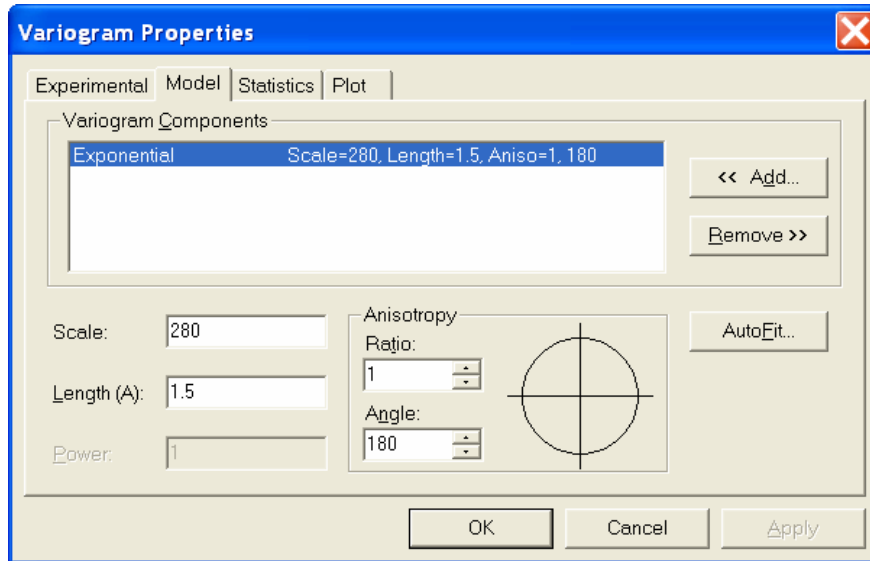
Linear: $Z_{new} = Z - [AX + BY + C]$

Quadratic: $Z_{new} = Z - [AX^2 + BY^2 + CXY + DX + EY + F]$


Generate Report

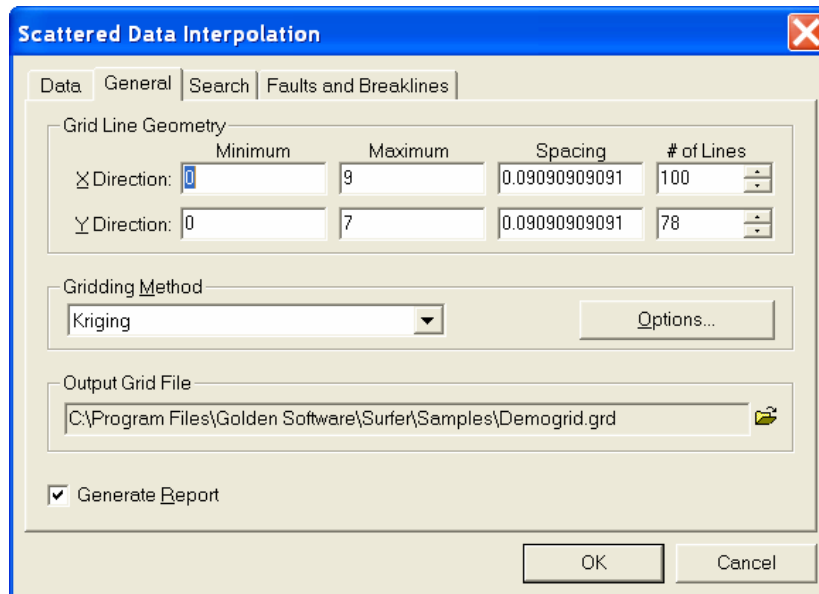
OK Cancel

4. Press OK to create a variogram. The default variogram is a linear model (the blue line in the figure below)

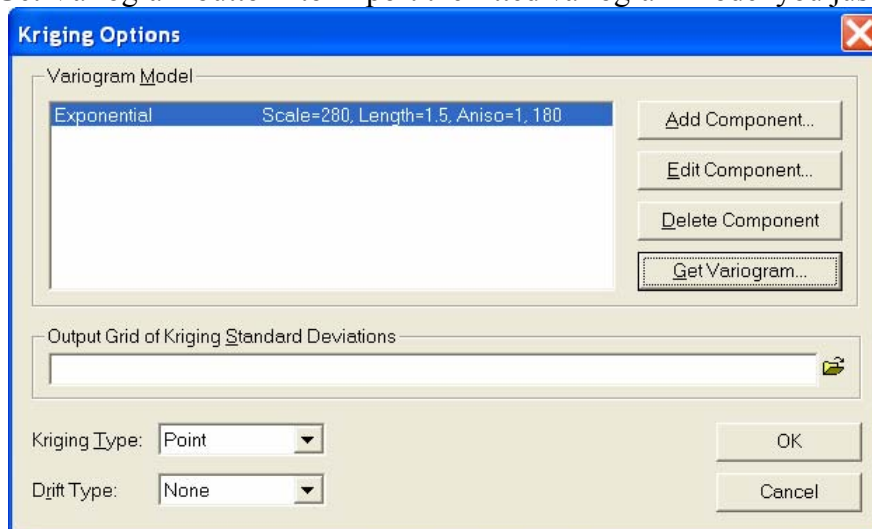


Kriging

1. From the menu, Choose Grid > Data... (select demogrid.dat)
2. choose grid line geometry at General Tab. To get a ASCII format of output grid file, click  right to the output file name, choose the file type as “GS ASCII (*.gri)”. Choose kriging as the gridding method. Then, click “options...” button.



3. Click “Get Variogram button” to import the fitted variogram model you just did.



4. Hit “OK” for both “kriging options” and “Scattered Data Interpolation” dialogs. Next, from the menu, choose Map > Contour Map > New Contour Map.... Select the Grid file created at step 3. At the following dialog, check “fill contours” and “smooth Contours”. The contour map for krigged data will look like:

