

Homework 7 - Displaying Irregularly Spaced Data in Matlab, **Due Wednesday August 1 at 8:00 A.M.** via Blackboard

- For this assignment you are to produce the best Matlab program you can for visualizing data from files having a format similar to that of NOAA\_Data3.txt, having the following required features:
  - The file contains irregularly spaced X and Y coordinates in the first two columns, and one or more additional columns containing function values. Your program should be able to handle any arbitrary file containing at least 3 rows and 3 columns, with no real upper limit.
  - A basic program should only query the user for the name of the file, and should determine everything else it needs to know from the file. Optional enhancements may require additional input, such as giving the user a choice of options.
  - Your program should use [subplots](#) and Matlab functions.
  - A triangulation must be calculated and displayed. ( See [Delaunay](#), [triplot](#), etc. )
  - At least one subplot must use "[hold](#)" to display multiple plots on a single set of axes, e.g. a data display and the triangulation.
  - Plots should include titles, axis labels, and colorbars as appropriate. ( See title, xlabel, ylabel, zlabel, colorbar, and colormap )
  - At least one plot should use [TriScatteredInterp\( X, Y, V \)](#) to generate a surface of interpolated function values. This will require the use of min, max, floor, ceil, linspace, meshgrid and something like pcolor or surf.
  - You will need to prepare a MS Word ( or equivalent ) document, documenting your program and including some sample results.
- Sample Results ( Quick and Dirty, not necessarily excellent )
  - [trilateratedNOAA.jpg](#), generated from [NOAA\\_Data3.txt](#)
  - [trilateratedPeaks.jpg](#), generated from [peaks.txt](#)
  - [sines.txt](#) - Sample data file with six columns of data
- Additional details / requirements and sample plots will be forthcoming. One such sample is as follows. ( Note that this is a bit of a "cheat", unless the program asks the user for the chart title and axis labels. )

