Mapomatic

Mapomatic is a tool for the visualisation and analysis of 3-dimensional data sets.

It is provided as an API, allowing its functions to be accessed from any programming language using the Microsoft .NET framework, and comes with an add-in for Microsoft Excel allowing it to be used directly from the toolbar.

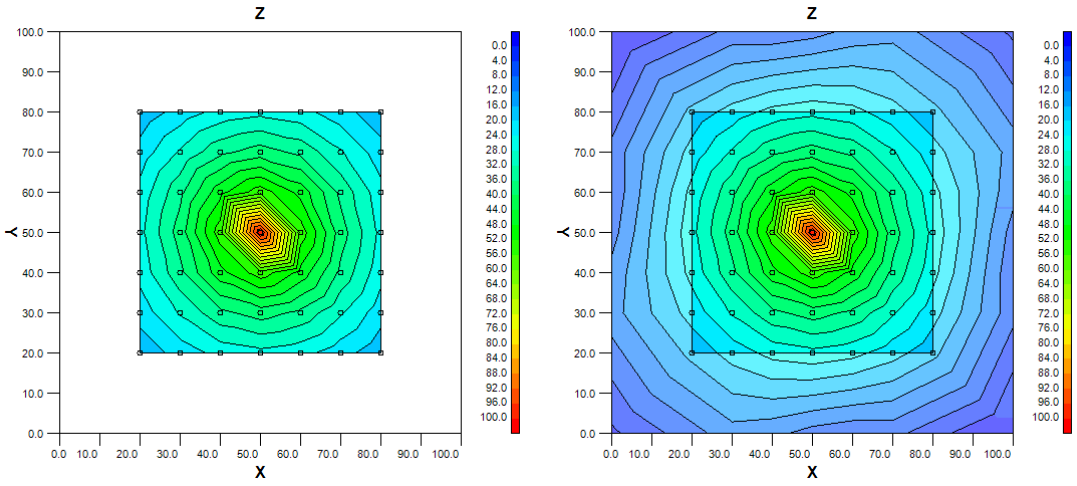
It has been produced with the visualisation and analysis of aerodynamic data in mind, specifically rideheight maps of aerodynamic coefficients, but in practice it may be applied to any 3-dimensional data-set.

Its key features are as follows:

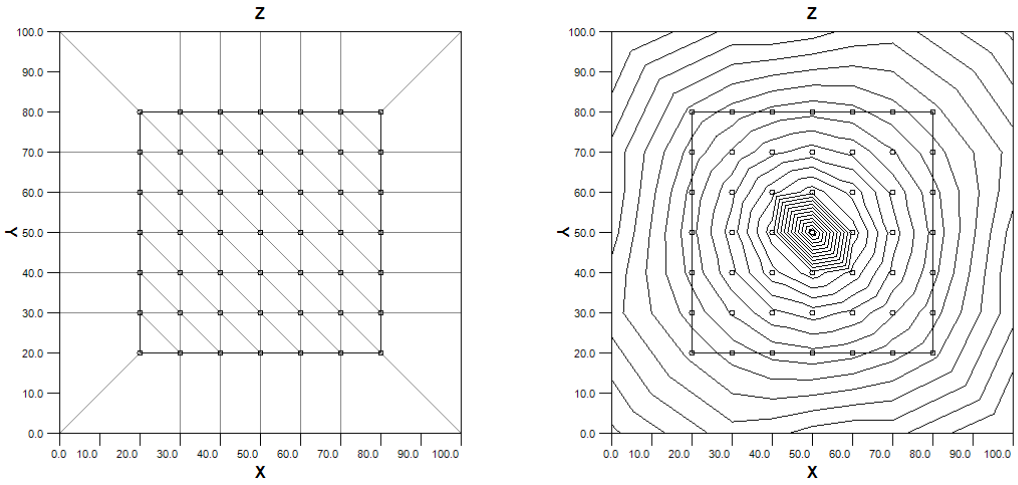
- Production of contour plots. Contour plot is of some Z-parameter, visualised by colour bands, plotted against X and Y co-ordinate.
- X-Y domain space is filled through Delaunay triangulation of the X-Y data points, linear interpolation within each triangle, and linear extrapolation outside of the data set boundary.
- Contour plots are fully customisable by the user, allowing for example selection of interpolation/extrapolation plotting, contour lines, data points, Delaunay triangulation, legend, axis limits, plot size, and legend and axis text size and formats.
- Generation of Microsoft Excel chart backgrounds, automatically scaling the contour plot X and Y limits to that of the chart, so that data may be plotted over the contour plot.
- Interpolation and extrapolation of the data set to any given X-Y co-ordinate.
- Integration of the Z value over the X-Y domain. For example area-integration of pressure values to give a force measurement.
- Extraction of linear slopes within each triangle, giving rate of change of Z-value with X and Y co-ordinate. For example providing rate of change of aero balance with front and rear rideheight.

Example plots are shown below:

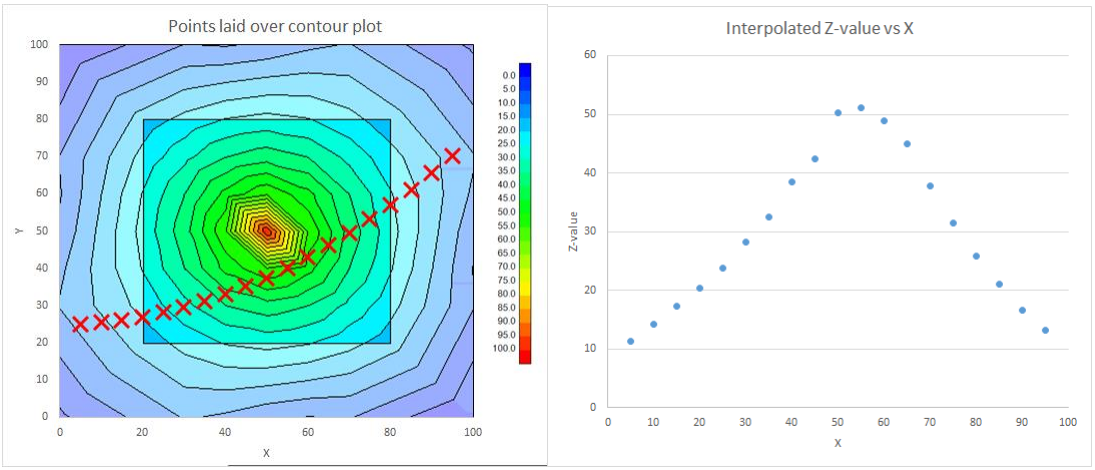
- Interpolated only, and interpolated + extrapolated contour plots:



- Delaunay triangulation, and contour line only plot:



- Example of using contour plot as a background to an Excel chart, and interpolating values from these points:



For all enquiries, or to arrange for a trial version, please email bg@aeromotivedevelopment.com.