

The Grid Trimming Feature in IMP

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Introduction

Grid Trimming is a feature of a number of IMP programs (those that plot deformation grids using the thin plate spline). Grid Trimming allows the user to control the portion of the deformation grid that is displayed, so that your diagrams or illustrations will contain only what you want to display.

An Example

The picture below was produced using the default settings in PCAGen6g.

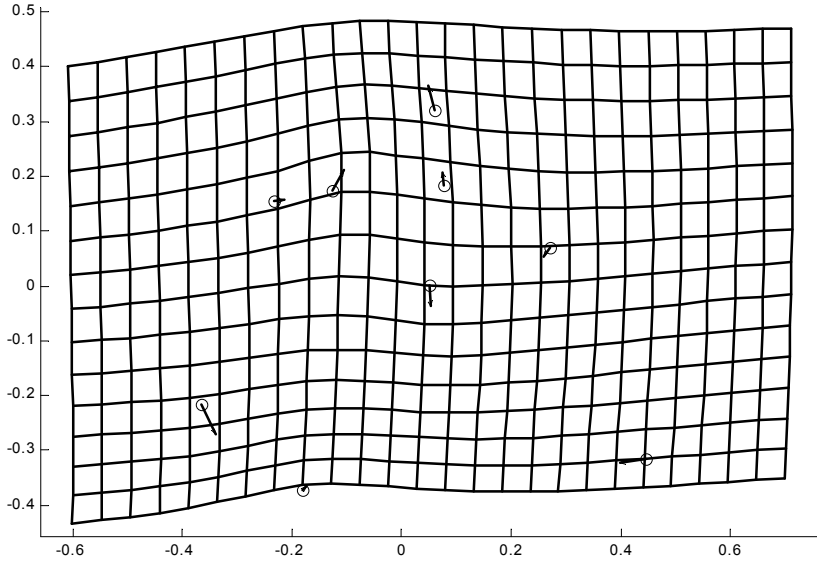


Figure 1

There are a number of problems with this figure, most particularly that the grid misses the lowest landmark entirely, and that the grid overlaps the landmarks on the left and right sides. We can use the Range Expansion box to increase the amount of area covered by the grid. The default setting for the Range Expansion is 1.1, increasing it to 1.3 produces the plot shown below.

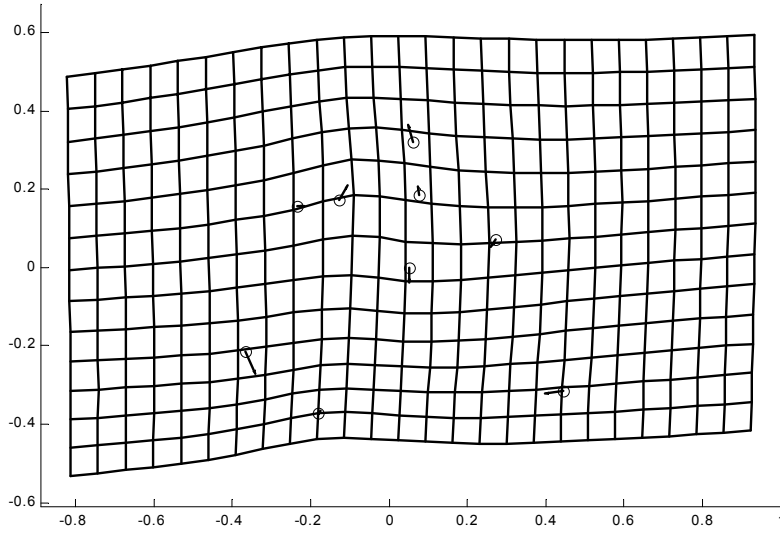


Figure 2

Figure 2 is better, but there is even more unused space at the sides of the grid. To reduce this problem, we need to use the *grid trimming* function. To start this function, click on the Grid Trimming Active button on whichever piece of software you are using, and then repeat the plot operation. For Figure 2 above, this produces the following plot:

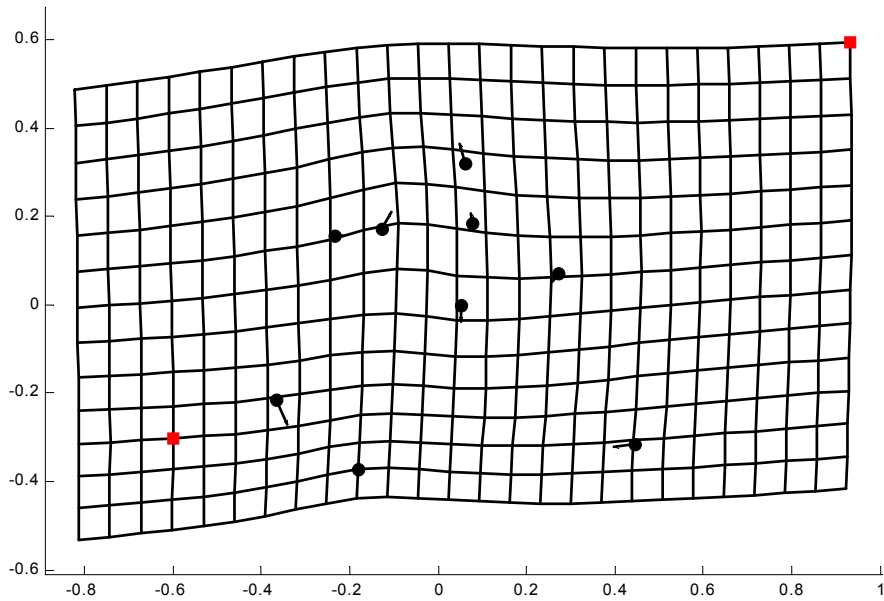


Figure 3

Figure 3 is identical to Figure 2 except for the appearance of red squares along the grid lines. These red squares are positioned by the user to indicate to the program what portion of the grid so to be displayed. The red square on the lower left indicates the lower left corner of the grid to be displayed, and the red square on the upper right indicates the upper right corner of the grid to be displayed.

The mouse is used to position the red squares, using a sequence of four operations listed below:

- 1.) The lower left square is first slid along the grid horizontally. To move it to the right, click the left mouse button, while the mouse is positioned to the right of the square. To move it to the left, click the left mouse button while the mouse is positioned to the right

of the square. Once the lower left square is positioned correctly along the horizontal axis, click the right mouse button.

2.) The lower left square is now slid along the grid vertically. To move it upwards, click the left mouse button while the mouse is positioned vertically above the square, to move it down (toward the bottom of the screen) click the left mouse button while the mouse is below the square on the screen. Once it is positioned correctly along the vertical axis, click the right mouse button.

3.) The upper right square is now slid along the grid horizontally. To move it to the right, click the left mouse button, while the mouse is positioned to the right of the square. To move it to the left, click the left mouse button while the mouse is positioned to the left of the square. Once the upper right square is positioned correctly along the horizontal axis, click the right mouse button.

4.) The upper right square is now slid along the grid vertically. To move it upwards, click the left mouse button while the mouse is positioned vertically above the square, to move it down (toward the bottom of the screen) click the left mouse button while the mouse is below the square on the screen. Once it is positioned correctly along the vertical axis, click the right mouse button. After this click, the grid will be re-plotted, using the squares as the limits of the grid

Hopefully, this description of moving the squares using the mouse isn't too complex. Give it a try, it might take several attempts to get the feel of it.

The image below shows the squares positioned reasonably for the image shown in figure 3.

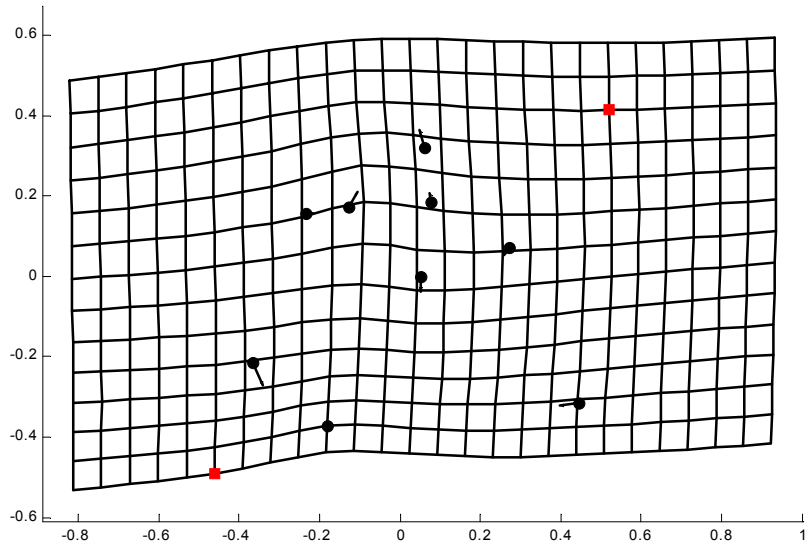


Figure 4 Showing a reasonable position of the squares

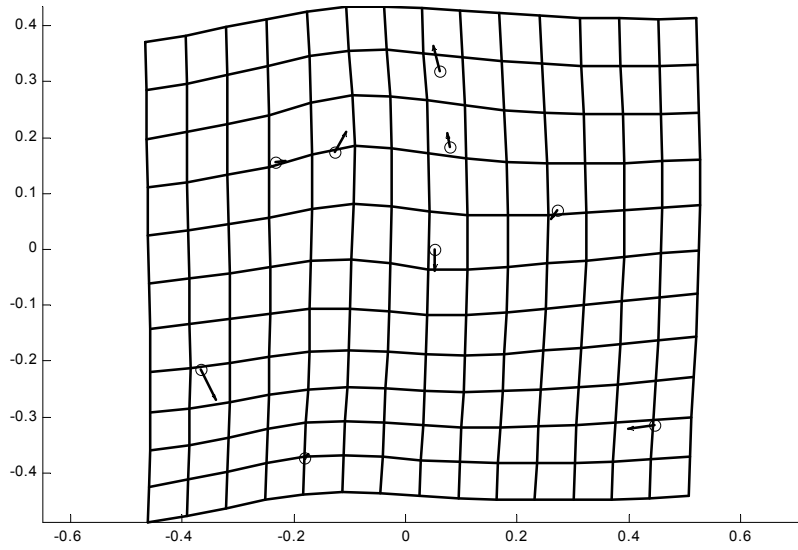


Figure 5: The deformation grid plotted after the squares were positioned as shown in

Figure 4.

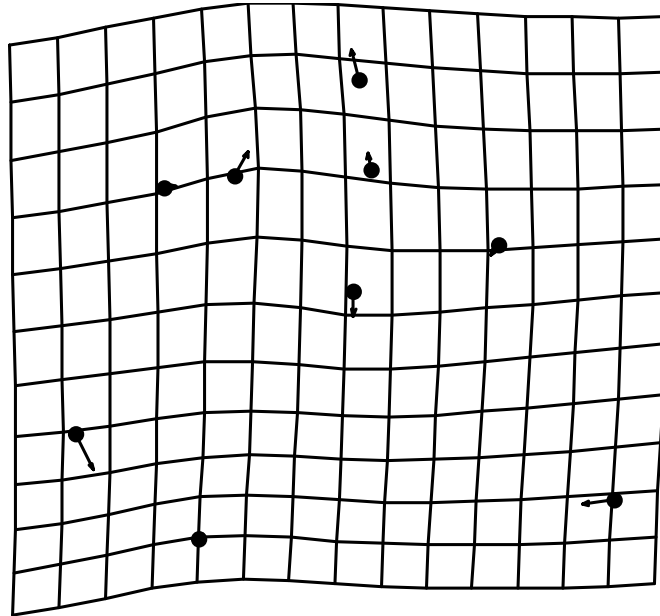


Figure 6: An improved version of Figure 5, produced by using the Display Options menus to increase the line weight and fill in the symbols. The axis were removed using the Axis Controls menu.

Further Approaches to Improving Images

1.) Processing the image after it has been produced in Adobe Illustrator, or Arts and Letters Express, or Corel Draw may result in better quality images. You may also be able to rotate the reference from to a different orientation using one of these programs.

2.) Sometimes saving the file in EPS format, loading it into Adobe Illustrator and then exporting it as a TIFF or JPEG can result in better quality images than pasting into Word. Dashed or Dotted lines in particular seem to work much better when saved to an EPS file. I really wish I knew why this was the case....

3.) I've seen some nice effects produced by taking an IMP plot and reversing the colors, which can make some striking looking slides for a presentation.

4.) Let me know if you have any further tips on improving images, I can add them to this file...

-Dave