Correlation function from data

Load data

Load the data `data.txt` and plot it with `pyplot.imshow`. The data is set in a 1 x 1 box. Use `extent = (0, 1, 1, 0)` to have correct orientatin of data.

Grid

Use `numpy.meshgrid` to create `x` and `y` components of each pixel in the image. Plot each points over the image with `pyplot.scatter` to make sure it is correctly aligned.

Thresholding

Use `skimage.filters.threshold_otsu` to binarize the image. Plot the resulting binary image to verify each blob is indeed separated from the other.

Labeling

Use `scipy.ndimage.label` to give a label to each blob. Then use the labels to get the average position of each blobs, using the grid of points you defined in step 2.

Pair correlation

Consider the following code:

https://github.com/cfinch/Shocksolution_Examples/blob/master/PairCorrelation/paircorrelation.py

Use it to plot the pair correlation function of the blob and prove they are essentially uncorrelated.