The Ni90 Al10 Supplementary Materials Science dataset consists of four CSV files generated by rastering (x,y) an electron beam across a material and quantifying the chemistry at each point. The data for the two elements (Nickel and Aluminum) is provided in once each in weight percent and atomic percent. For this particular material dataset, it would be interesting to see if there is a difference in model performance if weight, atomic, or both data are utilized.

Similar to the main TBC dataset, each csv file contains the chemistry data for one element from the periodic table. The data in the CSV files is organized according to the pixel it corresponds with in the 100 (width) x 69 (height) image. The data for eight of the elements is plotted in Image 1 below for reference.

Image 2 shows an **APPROXIMATE** solution to this problem. The blue “sea” is one phase (cluster) while the multi-colored “islands” are the second phase.

**Hints:** You will need to transform the given CSV data such that the chemical quantity for each of the elements is presented to your model for each pixel. It is expected that there will be 2 clusters within the chemistry data for this material.

Image 1 – Chemistry Values Plotted



Image 2 – **APPROXIMATE** Solution

