2D CFAR

The following steps were taken to implement 2D CFAR:

- First, the number of training and guard cells were chosen for each dimension (i.e. range and doppler). The number of cells were picked by looking at the spread of values around the peak in range doppler map (RDM).
- Next, I slide the cell under test (CUT) across the complete RDM, making sure the CUT is padded with Training and Guard cells from the edges.
- For every CUT, I sum the signal level within all its training cells. For this, I convert the signal value from logarithmic to linear using db2pow function.
- Next, I average the summed values for all of the training cells used. After averaging, I convert it back to logarithmic using pow2db.
- Further, I add the offset to it to determine the threshold.
- Finally, I compare the signal under CUT against this threshold.
- If the CUT level > threshold, I assign it a value of 1, else equate it to 0.
- To suppress the non-thresholded cells at the edges, I find all the cells in the new thresholded RDM, containing a value different from 1 and then set these cells to 0.