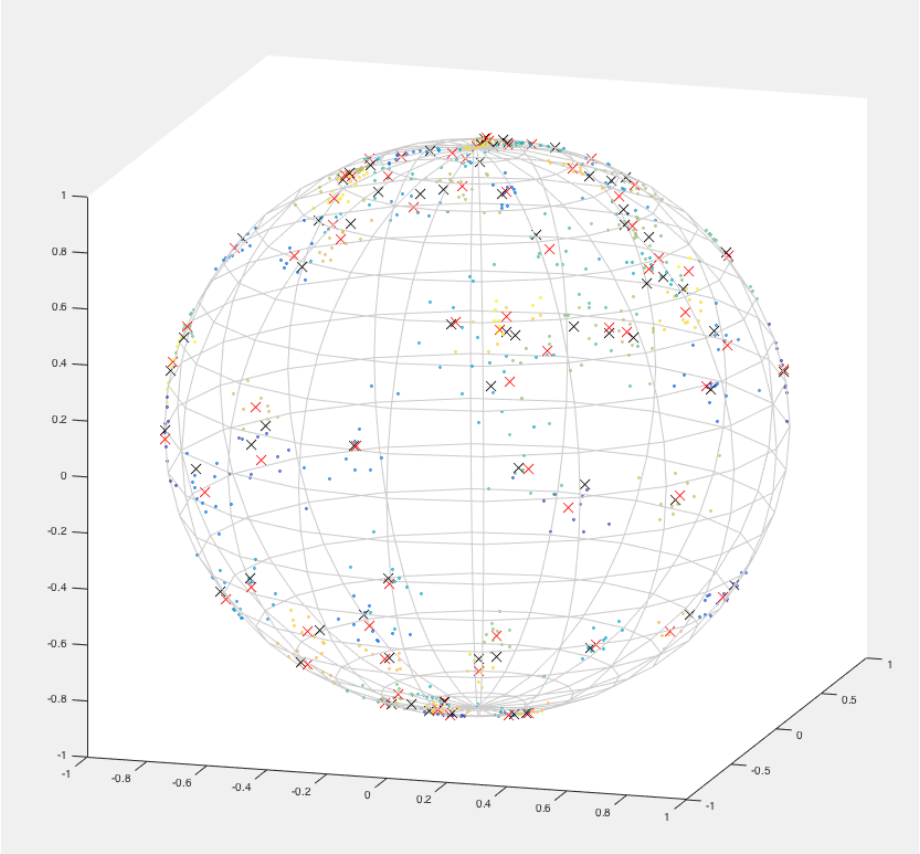
Figure 1: Plot of 70 clusters and means on a 3-D sphere



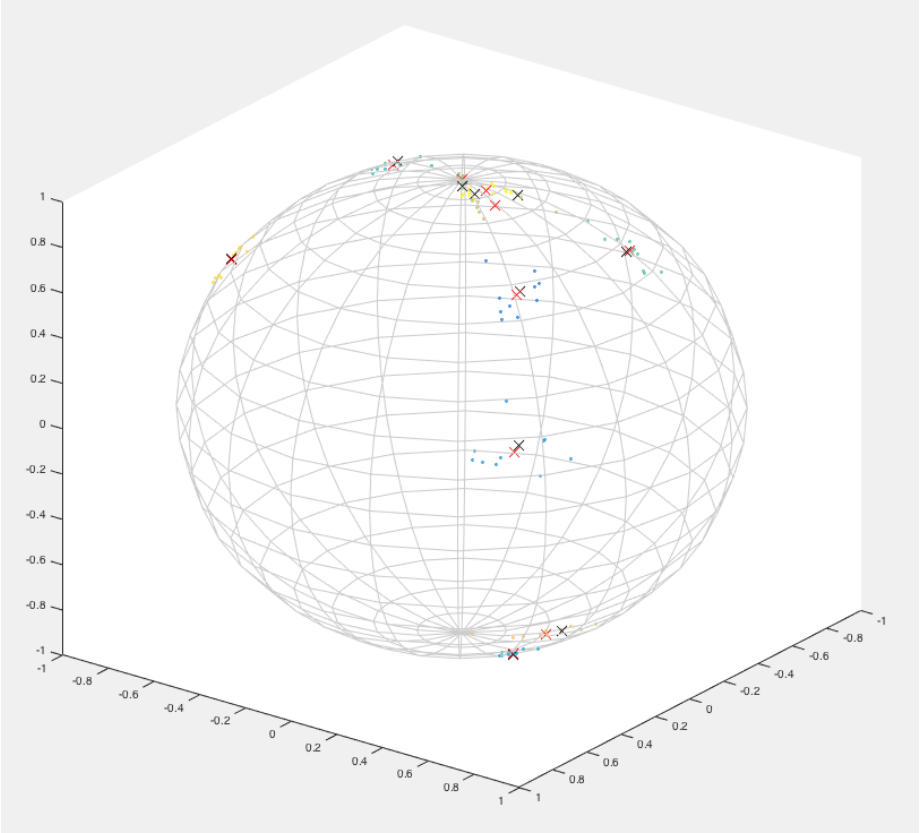
Our investigation

In order to test how well the spherical k-means clustering algorithm worked, we constructed a random data set using the Von Mises distribution random sampling function from the MATLAB Circular Statistics Toolbox[1]. We constructed 70 clusters of 10 points each, using random points on the sphere as means and with $\kappa = 100$, and then applied the spherical k-means clustering and visualized the results on the unit three dimensional sphere, color coded for each cluster and with estimated means labeled as red X's and true means labeled as black X's.

References

[1] Phillip Berens. Matlab central file exchange: Circular statistics toolbox. *http://www.mathworks.com/matlabcentral/fileexchange/10676-*

Figure 2: Plot of 10 clusters and means on a 3-D sphere



circular-statistics-toolbox–directional-statistics-. Accessed: 2016-05-18.