Notes for using the USKF:

In order to apply the USKF, the “Filter” variable in the .cfg file should be set to “UKF” (the default). If all parameters (Cd and Cr in the current build) are set as “Estimate”, the filter will function identically to the UKF. In order to set a parameter to be considered, simply fill in the “Estimation” variable as “Consider” for any of the parameters desired.

The consider parameters will be placed at the bottom of the state vector. Therefore, the values entered into the initial covariance vector must be ordered in the same way. Any considered parameter covariance values must be moved to the end of the vector in the order that they are featured in the cfj file (Cd first, Cr second for the current version).

Note, the USKF algorithm and DMC algorithms both attempt to manipulate which variables are placed at the end of the state vector. Due to this, using “Consider” parameters is incompatible with the DMC accelerations at this time. The filter will still operate as intended, however, any parameters must be set to “Estimate.”

Changes (all marked with comments) made to:

…Java/org/astria/Estimation.java

…Java/org/astria/Settings.java

…examples/plotodet.py

A .sh file for compiling the Java code that works on Windows machines has been included, titled buildWindows.sh