ASEN 5044 Statistical Estimation for Dynamical Systems
Fall 2022
Project Progress Report 2

Out: Tuesday 12/05/2023 (posted on Gradescope + Canvas)
Due: Tuesday 12/12/2023, 11:59 pm: ***GROUP SUBMISSION* TO GRADESCOPE!**

(only one group member needs to submit, but all group member names should be listed on page 1 of the document)

You are to submit solutions as a project group and will receive group credit for this assignment. Show all your work and explain your reasoning. ***Note that this assignment is intended to help give you feedback and guidance – grading is for completion. You should use answers on this assignment to form part of the final report and develop code needed for the final project – so read, think and plan ahead to organize, comment, modularize, and re-use your code! Good basic programming practices will save you a lot of time and effort!!***
Please submit a typed progress report with correct equations, correctly labeled plots, etc.

1. Report your progress on Part II of the final project assignment (nonlinear stochastic filtering). Provide clear and comprehensive responses to each part (state all assumptions, explain each major step of your approach, etc.). It is fine if you did not get all the way through the end of Part II yet: just describe your status with implementing the LKF and EKF, and provide relevant plots as described in the project assignment (i.e. single 'typical' simulation instance, NEES/NIS tests) to help explain where you are with Part 2, what your next steps are, and open issues your team has identified and is trying to resolve.

All filters DO NOT have to be calibrated or working perfectly at this stage – plots for untuned filters are acceptable. Plots help us understand your project status - but your reasoning, report and results should still be correctly presented and easy to follow.