

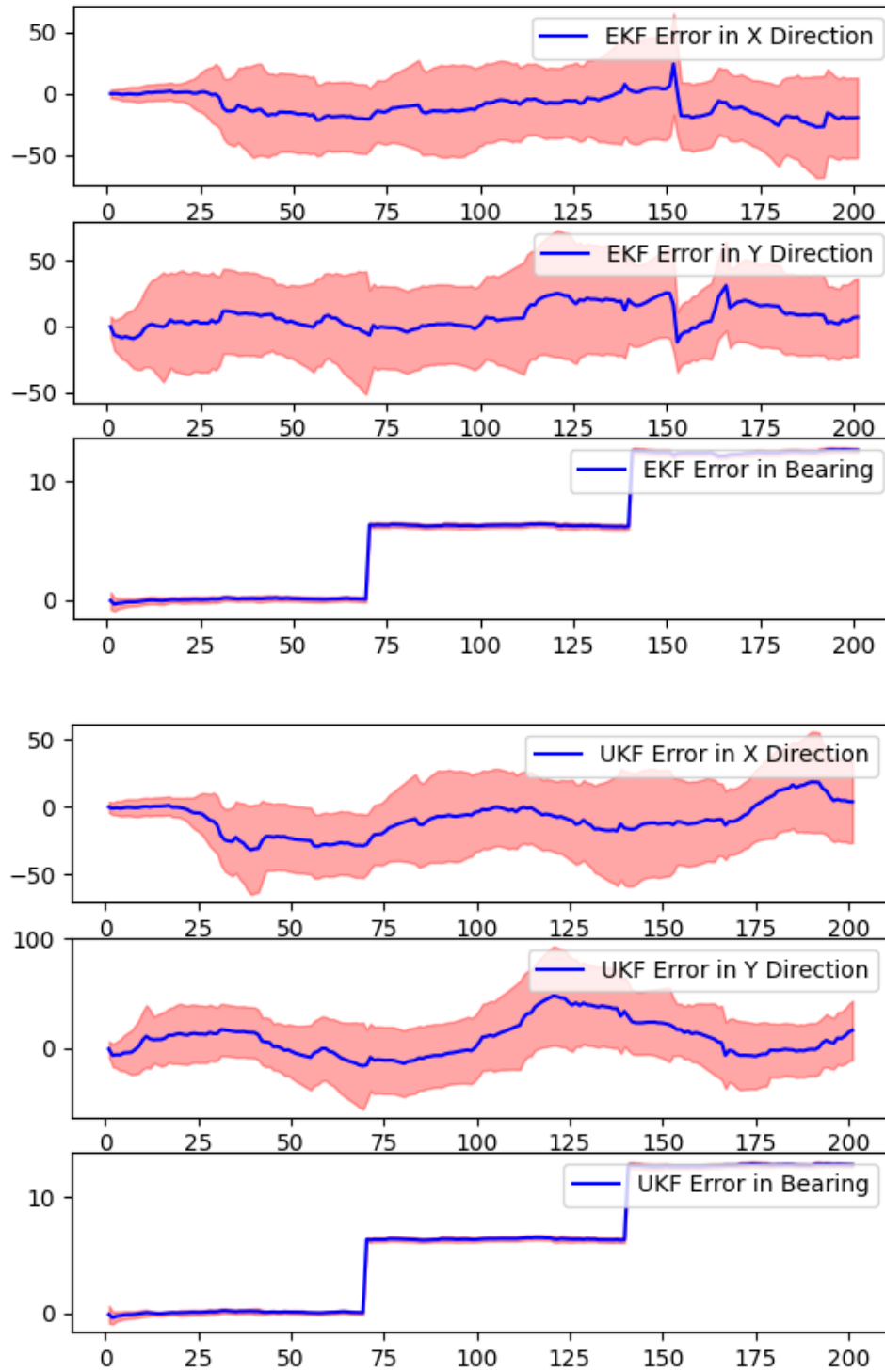
## Coding Set 4: EKF and UKF Localization

### Part 1

See video submission

### Part 2

Plots of error in all states for EKF and UKF Filter



### Part 3

- (a) The behavior as sensor or motion noise goes to zero is generally a decrease in performance of the estimate of the robot's position. The covariance ellipses did not cover the actual position of the robot which would result in potentially tragic consequences during actual operation.
- (b) Overestimating the noise parameters was equally bad in the fact that the covariance ellipses were massive and did not cover the actual position of the robot. Not knowing generally where the robot is and being wrong about the guess is just as bad as underestimating the noise parameters.