

SSY281 Model Predictive Control

Micro-homework 5

Kalman Filter and Moving Horizon Estimation

Deadline: February 8, 10:00

Systems & Control
Department of Electrical Engineering
Chalmers University of Technology

January 2019

Instructions

This assignment is **individual** and must be solved according to the following rules and instructions:

- Written report:
 - It should be one page with pdf format.
 - The report should be uploaded *before the deadline* to your project document area in PingPong.
 - Name the report as MA5_XX.pdf, where XX is your *group* number.
- Grading:
 - This assignment is *pass* or *fail*.

Question 1. *Explain the meaning of the solution of the Riccati equation in a Kalman filter.*

Question 2. *What is required for the prediction error covariance to converge to the solution of the ARE?*

Question 3. *Why would you use a Moving-Horizon estimator rather than a Kalman filter?*