

Homework 7 - Continuous current motor

Due on Tuesday 19 May 2020 at 23:59

A continuous current motor is modelled by

$$\begin{aligned}\dot{x}_1 &= -k_1 x_1 x_2 - R x_1 + u \\ \dot{x}_2 &= -k_2 x_2 - x_3 + K x_1^2 \\ \dot{x}_3 &= 0 \\ y &= \text{Ln} x_1\end{aligned}$$

where k_1 , k_2 , R and K are constants. Ln denotes the natural logarithm.

Write an observer with a linear error dynamics.