

ECE311S: Dynamic Systems and Control

Problem Set 11

Problem 1: Robust Tracking Problem

Design a robust regulator to solve the robust tracking problem for each of the following cases. Assume that error transients decay according to poles at $\{-1\}$ and estimator error transients decay according to poles at $\{-1, -2, -3, \dots\}$. In each case, verify the internal model principle.

(a) $G(s) = \frac{1}{s-1}$, $R(s) = \frac{1}{s^2}$.

(b) $G(s) = \frac{1}{s-1}$, $R(s) = \frac{s}{s^2+4}$.