ENME 606
NONLINEAR CONTROL DESIGN — Prof. M. Krstic

Homework 7

Due May 13, 1996

1. Design an adaptive controller that achieves global asymptotic tracking of the reference signal $y_r(t)$ in the system

$$\begin{aligned} \dot{x} &= \xi + x^2\theta \\ \dot{\xi} &= u \\ y &= x\,. \end{aligned}$$

2. Design an output-feedback controller that achieves global asymptotic stability of the equilibrium at the origin of the system

$$\begin{aligned} \dot{x} &= \xi + x^2 \\ \dot{\xi} &= u \\ y &= x\,. \end{aligned}$$