



A Constant-Gain Nonlinear Estimator for Linear Switching Systems

S. Ibrir and E.K. Boukas

*Mechanical Engineering Department, École Polytechnique de Montréal,
P.O. Box 6079, station "Centre-ville", Montréal, Québec, Canada H3C 3A7*

Received: December 19, 2003; Revised: June 1, 2004

Abstract: In this paper, we develop a nonlinear observer for switching linear systems. The developed state observer offers the properties of being self-tuning without any information about the switching instants and the current mode of the switching system to be observed. Numerical example is provided to highlight the usefulness of the developed results.

Keywords: *Estimation; switching systems; nonlinear observers; LMIs.*

Mathematics Subject Classification (2000): 93B36, 93C05, 93E03; 93E15.