1079-93-292 **N. Jordan Jameson*** (njordan.jameson@gmail.com), 6408 Frisco Avenue, Nashville, TN 37209, and **M. Knap**, **S. Sathananthan** and **L.H. Keel**. *Impulsive State Feedback Control of Markovian Switching Linear Stochastic Systems.*

Motivated by Markovian Switching Rational Expectation Models (MSRE) in economics, a problem of state feedback stabilization of discrete-time linear Markovian switching stochastic systems with multiplicative noise is considered. Under some appropriate assumptions, the stability of this system under pure impulsive control is given. Further under impulsive control, the state feedback stabilization problem is investigated. The Markovian switching is modeled by a discrete-time Markov chain. The control input is simultaneously applied to both the rate vector and the diffusion term. Sufficient conditions based on linear matrix inequalities (LMIs) for stochastic stability is obtained. The robustness of the LMI-based stability and stabilization concepts against all admissible uncertainties are also investigated. The parameter uncertainties we consider here are norm bounded. An example is given to demonstrate the obtained results. (Received January 17, 2012)