Stability of Hybrid Stochastic Systems

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Abstract : This paper is concerned with robust mean square stability of uncertain stochastic switched discrete time-delay systems. The system to be considered is subject to interval time-varying delays, which allows the delay to be a fast time-varying function and the lower bound is not restricted to zero. Based on the discrete Lyapunov functional, a switching rule for the robust mean square stability for the uncertain stochastic discrete time-delay system is designed via linear matrix inequalities. Finally, some examples are exploited to illustrate the effectiveness of the proposed schemes.