Adaptive stabilization and control stochastic time-varying systems.

ABSTRACT

We introduce the concept of an adaptive control Lyapunov function for the notion of globally asymptotically stable in probability of stochastic time-varying systems and use the stochastic version of Florchinger's control law established in Abedi et al. to design an adaptive controller. In this framework the problem of adaptive stabilization of a nonlinear stochastic system is reduced to the problem of nonadaptive stabilization of a modified system.