

Control Lyapunov function for feedback stabilization of affine in the control stochastic time-varying systems.

ABSTRACT

The aim of this paper is to study the problem of nonuniform in time global asymptotic stability in probability of affine in the control stochastic time-varying systems. We extend Artstein-Sontag theorem to the concept of control Lyapunov function to derive the necessary and sufficient conditions for feedback stabilization for affine in the control stochastic time-varying systems.

Keyword: Stochastic time-varying system; Control Lyapunov function; Global asymptotic stability in probability.