On the asymptotical and practical stability of stochastic control systems.

ABSTRACT

The asymptotical and practical stability in probability of stochastic control systems by means of feedback laws is provided. The main results of this work enable us to derive the sufficient conditions for the existence of control Lyapunov function that play a leading role in the existence of stabilizing feedback laws. Particularly, the sufficient conditions for practical stability in probability are established and numerical examples are also given to illustrate the usefulness of our results.