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时滞不确定性Markov切换线性随机微分系统的指数鲁棒稳定性

舒慧生 魏国亮

东华大学理学院, 上海

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摘要 研究了一类时滞不确定性Markov切换随机微分系统的均方指数鲁棒随机稳定性\bd 系统中的时滞是时变的, 不确定项结构为范数有界, Markov切换是连续时间、离散状态的时齐Markov过程{\b f\!.} 利用随机Lyapunov函数方法和LMI技术, 得到了几个判定系统均方指数鲁棒随机稳定性的充分性条件\bd 一个数值例子说明了判据的有效性和可行性.

关键词 时滞, 不确定性, Markov切换, 随机指数稳定, 鲁棒性, 线性矩阵不等式.

分类号

Robust Exponential Stability for Uncertain Stochastic Linear Systems with Markovian switching and Time Delay

SHU Huisheng;ZHAO Guoliang

College of Science, Donghua University, Shanghai

Abstract In this paper, we investigate the robust stochastic stability for a class of continuous time-varying delay uncertain systems with Markovian switching. The Markovian switching considered here forms a continuous-time discrete-time homogeneous Markov process. In terms of stochastic Lyapunov function method and linear matrix inequality, sufficient criterion for testing the robust stochastic stability of systems are proposed respectively. Finally, a numerical example is given to illustrate the effectiveness of the proposed method.

Key words

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通讯作者 舒慧生