

短文

非线性随机时滞系统族的鲁棒稳定性

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摘要

研究了不确定性一族非线性随机时滞系统的指数稳定性, 建立了这种系统的均方指数稳定和几乎必然指数稳定的时滞相关的充分准则; 然后应用这些充分条件到一类不确定性的随机时滞神经网络, 得到了这种神经网络指数稳定的实用判据. 最后一个数值例子说明所给准则的有效性.

关键词 [非线性随机时滞系统](#) [指数稳定性](#) [随机时滞神经网络](#)

分类号

Robust Stability of a Family of Nonlinear Stochastic Delay Systems

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Abstract

In this paper we investigate exponential stability of a family of nonlinear stochastic delay systems with uncertainties. For such systems, we establish sufficient criteria for the exponential stability in mean square and the almost sure exponential stability. These criteria are dependent of delay. Furthermore, we apply these sufficient conditions to a class of stochastic delay neural networks with uncertainties and obtain practical criteria to test exponential stability of these stochastic delay neural networks. Finally, a numerical example is given to illustrate the effectiveness of the obtained criteria.

Key words [Nonlinear stochastic delay system](#) [exponential stability](#) [stochastic delay neural network](#)

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