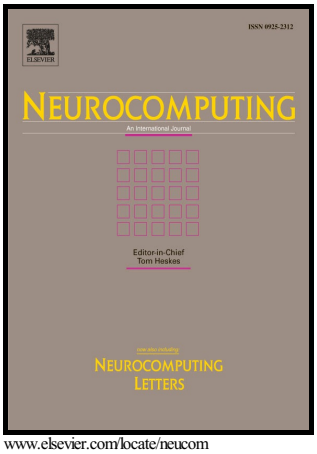

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Aperiodically intermittent H_∞ synchronization for a class of reaction-diffusion neural networks

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Abstract

In this paper, the intermittent H_∞ synchronization problem for a class of reaction-diffusion neural networks with Dirichlet boundary conditions is investigated. Different from the previous works concerning intermittent synchronization, it is assumed that the response system is subject to external disturbance, and both the control period and the control width may be variable. A switching-time-dependent Lyapunov function combined with the use of the extended Wiritinger's inequality for exploring the stabilizing role of the reaction-diffusion term is employed to analyze the exponential stability and L_2-gain performance of the synchronization error dynamics. In the framework of linear matrix inequalities, the aperiodically intermittent H_∞ synchronization controller is designed, which guarantees internally exponential stability as well as a prescribed L_2-gain from the exogenous input to the regulated error output. Two numerical examples are given to illustrate the effectiveness of the proposed method.

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