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$p$th moment exponential synchronization for stochastic delayed Cohen-Grossberg neural networks with Markovian switching. (English summary)


Summary: “This paper is a contribution to the analysis of the $p$th moment exponential synchronization problem for a class of stochastic delayed Cohen-Grossberg neural networks with Markovian switching. The jumping parameters are determined by a continuous-time, discrete-state Markov chain, and the delays are time-varying delays.

“By using the Lyapunov-Krasovskii functional, stochastic analysis theory, a generalized Halanay-type inequality as well as output coupling with delay feedback control technique, some novel sufficient conditions are derived to achieve complete $p$th moment exponential synchronization of the addressed neural networks. In particular, the traditional assumptions on the differentiability of the time varying delay and the boundedness of its derivative are removed in this paper. The results obtained in this paper generalize and improve many known results. Moreover, a numerical example and its simulation are also provided to demonstrate the effectiveness and applicability of the theoretical results.”

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