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Further results on exponential stability of neural networks with time-varying delay. (English)

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Summary: We investigate the problem of the exponential stability for a class of neural networks with time-varying delay. A triple integral term and a term considering the delay information in a new way are introduced to the Lyapunov-Krasovskii functional (LKF). The obtained criterion show advantages over the existing ones since not only a novel LKF is constructed but also several techniques such as Wirtinger-based inequality and convex combination technique are used to estimate the upper bound of the derivative of the LKF. Finally, a numerical example is provided to verify the effectiveness and benefit of the proposed criterion.

MSC:

92B20 Neural networks for/in biological studies, artificial life and related topics

Keywords:

neural networks; time-varying delay; exponential stability; Lyapunov-Krasovskii functional

Software:

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