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New and improved results on stability of static neural networks with interval time-varying delays. (English) Zbl 1334.93135

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Summary: The problem of stability analysis for static neural networks with interval time-varying delays is considered. By the consideration of new augmented Lyapunov functionals, new and improved delay-dependent stability criteria to guarantee the asymptotic stability of the concerned networks are proposed with the framework of linear matrix inequalities (LMIs), which can be solved easily by standard numerical packages. The enhancement of the feasible region of the proposed criteria is shown via two numerical examples by the comparison of maximum delay bounds.

MSC:

93D05 Lyapunov and other classical stabilities (Lagrange, Poisson, L^p, l^p, etc.) in control theory

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

Keywords:

stability analysis; static neural networks; interval time-varying delays; Lyapunov method

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