

# EXPONENTIAL STABILIZATION OF NON-AUTONOMOUS DELAYED NEURAL NETWORKS VIA RICCATI EQUATIONS

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## TÓM TẮT:

This paper concerns with the problem of exponential stabilization for a class of non-autonomous neural networks with mixed discrete and distributed time-varying delays. Two cases of discrete time-varying delay, namely (i) slowly time-varying; and (ii) fast time-varying, are considered. By constructing an appropriate Lyapunov–Krasovskii functional in case (i) and utilizing the Razumikhin technique in case (ii), we establish some new delay-dependent conditions for designing a memoryless state feedback controller which stabilizes the system with an exponential convergence of the resulting closed-loop system. The proposed conditions are derived through solutions of some types of Riccati differential equations. Applications to control a class of autonomous neural networks with mixed time-varying delays are also discussed in this paper. Some numerical examples are provided to illustrate the effectiveness of the obtained results.

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