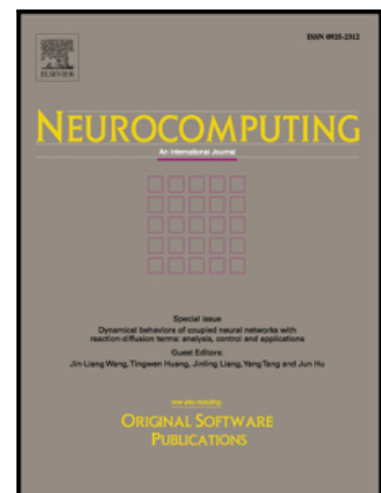


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Analysis and adaptive control for robust synchronization and $\mathcal{H}_\infty$ synchronization of complex dynamical networks with multiple time-delays

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Abstract

In this paper, the robust synchronization and robust $\mathcal{H}_\infty$ synchronization for complex networks with multiple time-delays are respectively investigated. Firstly, the robust synchronization for the complex network multiple time-delays is analyzed by using inequality techniques and constructing appropriate Lyapunov functional. Then, an adaptive controller is designed to ensure the robust synchronization for such network. Moreover, considering the most networks exist external disturbances, we also analyze robust $\mathcal{H}_\infty$ synchronization of complex networks with multiple time-delays, and an adaptive controller is developed to guarantee the robust $\mathcal{H}_\infty$ synchronization for such network. Finally, in order to verify the validity of these acquired results, two numerical examples are provided.

Keywords: Complex networks, Multiple time-delays, Synchronization, $\mathcal{H}_\infty$

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