Finite-time Projective Synchronization for Semi-markovian Neural Networks Systems via Event-triggered Sliding Mode Control

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Abstract

This paper investigates the projection synchronization problem of stochastic neural networked systems based on event-triggered sliding mode control (SMC) covering a finite-time period. For improve transmission efficiency and save network resources, a related event-triggered scheme is proposed for the error system, which can identify whether the measurement error should be transmitted to the controller. For finite-time projective synchronization under given event-triggered mechanism, a semi-Markov jump system model is proposed. Secondly, by creating Lyapunov Krasovsky functional and using linear matrix inequality (LMI) technology, as well as considering a proper sliding surface, a sliding mode controller is designed to implement finite-time projection synchronization of different neural networks. Finally, numerical simulations are exploited to illustrate the effectiveness of the main results.

Full-text

Due to technical limitations, full-text HTML conversion of this manuscript could not be completed. However, the manuscript can be downloaded and accessed as a PDF.

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Time responses of the switching functions.

Figure 12

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Figure 16

The event-triggered release time and interval of neighbouring release time

Figure 17

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