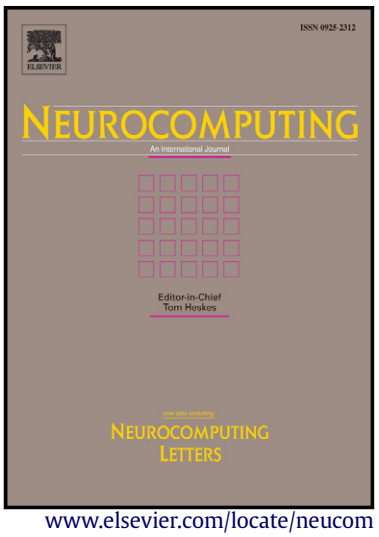

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Finite-Time Stability of Markovian Jump Neural Networks with Partly Unknown Transition Probabilities

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Abstract

This paper deals with the finite-time robust stability of Markovian jump neural networks with partly unknown transition probabilities. Based on Lyapunov stability theory, two sufficient conditions are derived such that Markovian jump neural networks with partly unknown transition probabilities and uncertain Markovian jump neural networks with partly unknown transition probabilities are stochastically finite-time stable and robust finite-time stable, respectively. Then, the finite-time stable and robust stability conditions are obtained based on the stability criterion. The stability conditions are expressed in terms of linear matrix inequalities (LMIs), which can be easily solved by standard software. Finally, two numerical examples are given to demonstrate the effectiveness of the proposed results.

Keywords: Markovian jump systems (MJSs), Finite-time stable, Partly unknown transition probabilities, Neural networks

I. INTRODUCTION

In recent years, neural networks have attracted increasing attention due to their extensive application in different fields such as signal processing, pattern recognition, associative memory and optimization problems. Therefore, many problems of stability, synchronization of neural

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