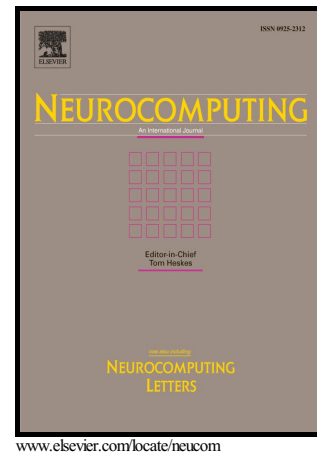


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Global Lagrange stability for inertial neural networks with mixed time-varying delays

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Abstract

This paper concerns with the global Lagrange stability of inertial neural networks with discrete and distributed time-varying delays. By choosing a proper variable substitution, the inertial neural networks can be rewritten as a first-order differential system. Based on the Lyapunov functional method, inequality techniques and analytical method, several sufficient conditions are derived to guarantee the global exponential stability of the inertial neural networks in Lagrange sense. Meanwhile, the global exponential attractive set is also given. Simulation results demonstrate the effectiveness of the theoretical results.

Keywords: inertial neural networks, Lagrange stability, time-varying delay, global exponential attractive set.

1. Introduction

In recent years, neural networks have been successfully applied in many fields such as pattern recognition, associative memories, signal processing, fixed-point computations, and so on. Therefore, the study of neural networks has received considerable attention during the past decades, and various issues of neural networks [1–8] have been investigated and many important results on the dynamical behaviors have been reported. Noticing that lots

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