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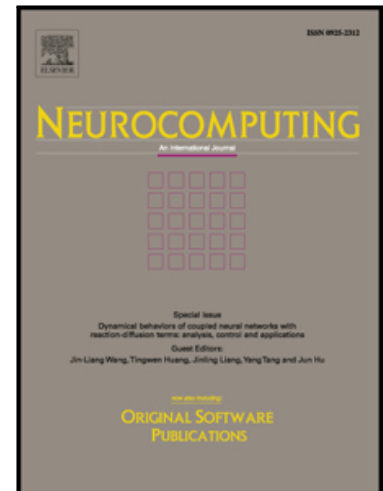
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Lagrange stability analysis for complex-valued neural networks with leakage delay and mixed time-varying delays

Qiankun Song^{a,*}, Hanqi Shu^b, Zhenjiang Zhao^c, Yurong Liu^{d,e}, Fuad E. Alsaadi^e

^a Department of Mathematics, Chongqing Jiaotong University, Chongqing 400074, China

^b School of Economics and Management, Chongqing Jiaotong University, Chongqing 400074, China

^c Department of Mathematics, Huzhou University, Huzhou 313000, China

^d Department of Mathematics, Yangzhou University, Yangzhou 225002, China

^e Communication Systems and Networks (CSN) Research Group, Faculty of Engineering, King Abdulaziz University, Jeddah 21589, Saudi Arabia

Abstract: This paper discusses the stability in Lagrange sense for complex-valued neural networks with time-varying discrete delays and distributed delays as well as leakage delay. By constructing an appropriate Lyapunov-Krasovskii functional, and employing free-weighting-matrix approach and inequality techniques in matrix form, a sufficient criterion to guarantee global exponential stability in Lagrange sense is obtained for the investigated neural networks. The given criterion is delay-dependent and is shown as linear matrix inequalities in complex domain, which can be calculated numerically applying valid YALMIP toolbox in MATLAB. A numerical example is provided to manifest the validity of the proposed result.

Keywords: Complex-valued neural networks; Lagrange stability; time-varying discrete delays; time-varying distributed delays; leakage delay; linear matrix inequality in complex domain

1. Introduction

* Corresponding author. Tel.: +86 2362778182.

E-mail address: qiankunsong@163.com(Q. Song)

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