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Journal of the Franklin Institute 353 (2016) 448–461

Journal of The Franklin Institute

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Existence and asymptotic behavior results of periodic solution for discrete-time neutral-type neural networks ☆

Bo Du[a,b,*], Yurong Liu[b,c], Ibrahim Atiatallah Abbas[d]

[a]Department of Mathematics, Huaiyin Normal University, Huaian Jiangsu 223300, PR China
[b]Department of Mathematics, Yangzhou University, Yangzhou Jiangsu 225002, PR China
[c]Communication Systems and Networks (CSN) Research Group, Faculty of Engineering, King Abdulaziz University, Jeddah 21589, Saudi Arabia
[d]Department of Mathematics, Faculty of Science and Arts-Khulais, King AbdulAziz University, Saudi Arabia

Received 20 March 2015; received in revised form 14 October 2015; accepted 13 November 2015
Available online 12 December 2015

Abstract

A generalized discrete neutral-type neural network with time-varying delays is studied. The existence results of periodic solution for the above neural networks are obtained by using Mawhin's continuation theorem of coincidence degree theory, and sufficient conditions are given to guarantee global exponential stability of periodic solution. Finally, a numerical example is given to show the effectiveness of the results in this paper.
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1. Introduction

In the past decade, cellular neural networks (for short CNNs) have attracted considerable attention because of their potential applications in associative memory, pattern recognition, optimization, model identification, signal processing, etc. On the other hand, time delays, both

☆This project was funded by the Deanship of Scientific Research (DSR), King Abdulaziz University, under grant No. 9-130-36-HiCi, NNSF (No. 11571136) of China and Post-doctoral Foundation of China (2014M561716). The authors, therefore, acknowledge with thanks DSR technical and financial support.

*Corresponding author at: Department of Mathematics, Huaiyin Normal University, Huaian Jiangsu 223300, PR China.
E-mail address: dubo7307@163.com (B. Du).

http://dx.doi.org/10.1016/j.jfranklin.2015.11.013
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