Global exponential stability of clifford-valued recurrent neural networks

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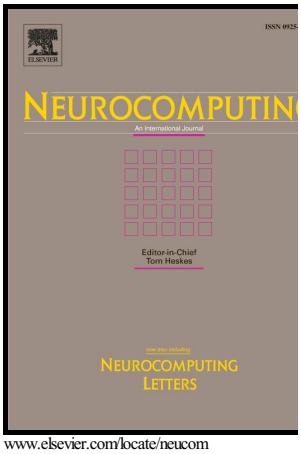

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PII: S0925-2312(15)01163-7
DOI: http://dx.doi.org/10.1016/j.neucom.2015.08.016
Reference: NEUCOM15939

To appear in: *Neurocomputing*

Received date: 30 June 2015
Accepted date: 3 August 2015

Cite this article as: Jingwen Zhu and Jitao Sun, Global exponential stability o clifford-valued recurrent neural networks, *Neurocomputing* http://dx.doi.org/10.1016/j.neucom.2015.08.016

Global Exponential Stability of Clifford-Valued Recurrent Neural Networks

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Abstract

This paper investigates global exponential stability of a class of clifford-valued recurrent neural networks. By using Brouwer's fixed point theorem, the existence of the eqilibrium point of clifford-valued recurrent neural networks is studied. A sufficient condition of globally exponential stability is given by the method of the clifford-valued variation parameter and inequality technique. Compared with the previous methods, our method does not resorting to any Lyapunov function which is not easy to construct.

Keywords: clifford-valued; recurrent neural network; variation parameter; exponential stability.

1. Introduction

In the past decades, stability of networks has attracted considerable attention since it plays an important role in applications, see, for example, [1–14] and references therein. In [1], the asymptotic stability of differential

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