

Accepted Manuscript

Adaptive Neural Network Prescribed Performance Matrix Projection Synchronization for Unknown Complex Dynamical Networks with Different Dimensions

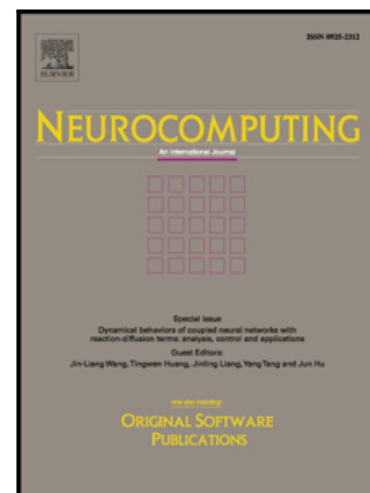
Aili Fan, Junmin Li

PII: S0925-2312(17)31814-3
DOI: [10.1016/j.neucom.2017.11.055](https://doi.org/10.1016/j.neucom.2017.11.055)
Reference: NEUCOM 19120

To appear in: *Neurocomputing*

Received date: 7 August 2017
Revised date: 30 October 2017
Accepted date: 26 November 2017

Please cite this article as: Aili Fan, Junmin Li, Adaptive Neural Network Prescribed Performance Matrix Projection Synchronization for Unknown Complex Dynamical Networks with Different Dimensions, *Neurocomputing* (2017), doi: [10.1016/j.neucom.2017.11.055](https://doi.org/10.1016/j.neucom.2017.11.055)



This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Adaptive Neural Network Prescribed Performance Matrix Projection Synchronization for Unknown Complex Dynamical Networks with Different Dimensions[☆]

Aili Fan, Junmin Li

Department of Applied Mathematics, Xidian University, Xian 710071, P. R. China

Abstract

This paper investigates an adaptive neural network prescribed performance synchronization scheme for unknown complex dynamic networks with different dimensions. Based on predefined performance bounded and Lyapunov stability theory, adaptive neural networks controllers are designed to ensure that synchronization errors remain in a neighborhood of origin with the prescribed bounds. In addition, the paper analyses in detail that the synchronization behaviors between drive network selected as the three-dimension chaotic system and response network selected as the four-dimension hyperchaotic chaotic system. The numerical simulation results are presented to show the validity of the proposed approach.

Keywords: Complex dynamic networks, Synchronization, Adaptive control, Prescribed Performance, Different dimensions

1. INTRODUCTION

In the real world, most of the systems can be described as complex networks. Such as the Internet, food webs, social network, World Wide Web, communication networks, to name just a few. In the past few years, the analysis and
5 the study on complex behaviors of complex dynamical networks have received

Email address: jmli@mail.xidian.edu.cn (Junmin Li)

Download English Version:

<https://daneshyari.com/en/article/6864623>

Download Persian Version:

<https://daneshyari.com/article/6864623>

[Daneshyari.com](https://daneshyari.com)