

Accepted Manuscript

Title: Finite-time synchronization for multi-link complex networks via discontinuous control

Author: Hui Zhao Lixiang Li Haipeng Peng Jinghua Xiao
Yixian Yang Mingwen Zheng Shudong Li



PII: S0030-4026(17)30363-7
DOI: <http://dx.doi.org/doi:10.1016/j.ijleo.2017.03.098>
Reference: IJLEO 59021

To appear in:

Received date: 24-12-2016
Accepted date: 21-3-2017

Please cite this article as: Hui Zhao, Lixiang Li, Haipeng Peng, Jinghua Xiao, Yixian Yang, Mingwen Zheng, Shudong Li, Finite-time synchronization for multi-link complex networks via discontinuous control, *Optik - International Journal for Light and Electron Optics* (2017), <http://dx.doi.org/10.1016/j.ijleo.2017.03.098>

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.

Finite-time synchronization for multi-link complex networks via discontinuous control

Hui Zhao^a, Lixiang Li^{b,*}, Haipeng Peng^b, Jinghua Xiao^a, Yixian Yang^b,
Mingwen Zheng^{a,c}, Shudong Li^{d,e}

^aState Key Laboratory of Information Photonics and Optical Communications, School of Science, Beijing University of Posts and Telecommunications, Beijing 100876, China

^bInformation Security Center, State Key Laboratory of Networking and Switching Technology, Beijing University of Posts and Telecommunications, Beijing 100876, China

^cSchool of Science, Shandong University of Technology, Zibo 255000, China

^dCollege of Mathematics and Information Science, Shandong Technology and Business University, Yantai, Shandong 264005, China

^eSchool of Computer Science, National University of Defense Technology, 410073 Changsha, China

Abstract

This paper is concerned with finite-time synchronization problem for multi-link complex networks with two kinds of discontinuous control approaches, e.g., the intermittent control and the impulsive control. Based on the above two discontinuous control methods, comparing with previous continuous control approaches, some less conservative criteria are derived for the finite-time synchronization of the multi-link complex networks. We consider the model of multi-link complex network, which is split into some sub-networks based on different time-delays and each sub-networks can be any network forms. Multi-link complex network with different sub-networks may present some interesting dynamical phenomena. Simple intermittent feedback controller and impulsive feedback controller are designed to achieve finite-time synchronization between the drive network and response network. Several novel and useful finite-time synchronization criteria are also derived based on finite-time stability theory, intermittent and impulsive control techniques. Finally, two numerical simulations are provided

*Corresponding author.

E-mail addresses: li_lixiang2006@163.com

Download English Version:

<https://daneshyari.com/en/article/5025649>

Download Persian Version:

<https://daneshyari.com/article/5025649>

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