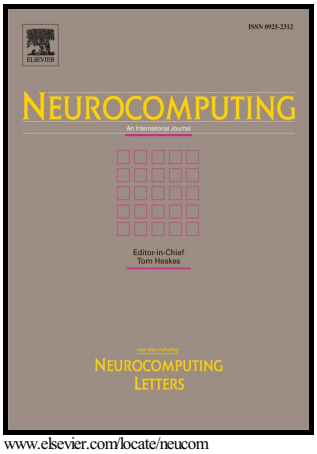
Author's Accepted Manuscript



www.elsevier.com/locate/neucom

Finite-time topology identification and stochastic synchronization of complex network with multiple time delays

Hui Zhao, Lixiang Li, Haipeng Peng, Jinghua Xiao, Yixian Yang, Mingwen Zheng

PII: S0925-2312(16)31015-3
DOI: http://dx.doi.org/10.1016/j.neucom.2016.09.014
Reference: NEUCOM17542

To appear in: *Neurocomputing*

Received date: 25 February 2016
Revised date: 17 June 2016
Accepted date: 8 September 2016

Cite this article as: Hui Zhao, Lixiang Li, Haipeng Peng, Jinghua Xiao, Yixian Yang and Mingwen Zheng, Finite-time topology identification and stochastic synchronization of complex network with multiple time delays, *Neurocomputing*, http://dx.doi.org/10.1016/j.neucom.2016.09.014

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 galley proof before it is published in its final citable 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.

ACCEPTED MANUSCRIPT

Finite-time topology identification and stochastic synchronization of complex network with multiple time delays

Hui Zhao[a], Lixiang Li[b,*], Haipeng Peng[b], Jinghua Xiao[a], Yixian Yang[b], Mingwen Zheng[a]

[a] *State Key Laboratory of Information Photonics and Optical Communications, School of Science, Beijing University of Posts and Telecommunications, Beijing 100876, China*
[b] *Information Security Center, State Key Laboratory of Networking and Switching Technology, Beijing University of Posts and Telecommunications, Beijing 100876, China*

Abstract

This paper investigates issues of finite-time topological identification and stochastic synchronization for two complex networks with multiple time delays. In the paper, we propose two different approaches to identify the topological structure and guarantee stochastic synchronization for complex networks in finite time, which are achieved based on finite-time stability theory and properties of Wiener process. Several useful finite-time synchronization and identification criteria are obtained simultaneously based on adaptive feedback control method. In the final section, numerical examples are examined to illustrate the effectiveness of the analytical results.

Keywords: Finite-time synchronization, multiple time delays, topology identification, stochastic noise perturbations

☆Foundation item: Supported by the National Natural Science Foundation of China (Grant No. 61472045,61170269), the Beijing Natural Science Foundation (Grant No. 4142016), the Scientific Research Project of Beijing Municipal Commission of Education (KZ20150015015, KM201510015009).

*Corresponding author.
E-mail addresses: li_lixiang2006@163.com

Accepted manuscript

Download English Version:

https://daneshyari.com/en/article/4948218

Download Persian Version:

https://daneshyari.com/article/4948218

Daneshyari.com