2017 International Workshop on Complex Systems and Networks (IWCSN 2017)

Doha, Qatar
8-10 December 2017

IEEE

IEEE Catalog Number: CFP17IWC-POD
ISBN: 978-1-5386-1891-2

Copyright © 2017 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP17IWC-POD
ISBN (Print-On-Demand):	978-1-5386-1891-2
ISBN (Online):	978-1-5386-1890-5

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Distributed Consensus Tracking for Nonlinear Multiagent Systems with A High-Dimensional Leader and Intermittent Communications 1
Lina Shen, Wenwu Yu and Peijun Wang

Out Rotor Bearingless Brushless DC Motor for Flywheel Energy Storage . 7
Yukun Sun, Fan Yang, Ye Yuan and Yonghong Huang

Novel Prediction and Controlling Software for Improved BHK-21 Cell Culture Process Based on Soft Sensing 13
Yonghong Huang, Huan Zang, Xiaodong Cheng and Hongsheng Wu

Optimal Control Strategy of a Node-level Dynamical Model with External Computers 21
Xulong Zhang and Chenquan Gan

On the General Problem of Solution and Stability for Variable-Time Switched Systems 27
Shaoguo Cui, Chao Liu and Xiaoyang Liu

Continuous Sliding-Mode Control for Nonlinear Systems with Unmatched Uncertainties 34
Minghao Zhou, Yong Feng, Xinghuo Yu and Fengling Han

Optimal Operation of Residential Cooling Heating and Power System Integrated with DR Programs 39
Xinxin Fang and Xing He

Controllability of Heterogeneous Networked MIMO Systems 45
Peiru Wang, Linying Xiang and Fei Chen

Adaptive Synchronization for Memrisitive Neural Networks 50
Xinmiao Dong and Xin Wang

Formal Verification for Winning Strategy of Chess Game 55
He Qing

Effect of Capacity Redundancy Disparity on Robustness of Power Grids . 59
Haicheng Tu, Yongxiang Xia and Xi Chen

Consensus of Discrete-Time Linear Multi-Agent Systems with Inherent Connections 66
Yuting Feng and Zhisheng Duan

Synchronization of Memristor-Based Fractional-Order Neural Networks with Time-Varying Delays Via Pinning and Adaptive Control 71
Yi Xiang and Biwen Li

A New Redundant-Free and Compact Method for Efficient Calculation of Node Admittances 78
Sotoudeh Hamedi-Hagh

Model Reduction and ℓ_1-Gain Analysis for Two-Dimensional Positive Systems 84
Jinling Liang, Dehao Li and Huan Pang

Predicting the Popularity of Tags in StackExchange QA Communities . . . 90
Chenbo Fu, Yongli Zheng, Shidi Li, Qi Xuan and Zhongyuan Ruan

Effect of Indirect Social Ties on Cascading Diffusion of Information 96
Zhongyuan Ruan, Jiajia Wang, Jinshan Xu, Meiyu Zhang, Qi Xuan and Chenbo Fu

Research on Associative Memories Based on CNNs with Time Delay and Value-Varying Templates 102
Qi Han, Shiqin Deng, Zhengyang Wu, Jun Yi, Junjian Huang, Tengfei Weng and Jin Liu

Design of Stochastic Model Predictive Control for Wind Energy Conversion System 108
Yuntao Shi, Xiang Xiang, Yuan Zhang and Dehui Sun

Analysis of Asymmetric Neural Networks with Time Delay and Its Applications in Associative Memories 115
Jin Liu, Zhengyang Wu, Shiqin Deng, Jun Yi, Junjian Huang, Qi Han and Tengfei Weng

Finite-Time Synchronization of Memristive Hyperchaotic Systems 120
Junjian Huang, Yanjun Liu, Changjiu Pu, Yu Qin, Wei Zhang and Qi Han

Synchronization of Stochastic Delayed Neural Networks via Aperiodically Intermittent Control 124
Wei Zhang and Junjian Huang

The Existence of Oscillatory Solutions on A Class of n-Node Recurrent Neural Network Model with Distributed Delays 130
Chunhua Feng and Rejean Plamondon

Second-Order Multi-Agent Systems with Event-Trigger 138
Hexi Mu and Yonghui Wu

Lagrange Stability of Complex-Valued Memristor-Based Neural Networks 144
Nengjie Wang and Biwen Li

Expert Recommendation in OSS Projects Based on Knowledge Embedding 149
Chenbo Fu, Mingming Zhou, Qi Xuan and Hong-Xiang Hu

Distributed H_∞ Control of Multi-agent Systems over Randomly Switching Topologies 156
Jingyao Wang, Zhisheng Duan, Guanghui Wen and Yuqing Hao

Design of High-Capacity Auto-Associative Memories Based on the Analysis of Complex-Valued Neural Networks 161
Weiqiang Gong, Jinling Liang and Dehao Li

A Novel Cooperative Routing Algorithm based on "Gravitation" in Wireless Networks 169
Li Guo, Yuli Zhao, Wei Zhang, Hai Yu and Zhiliang Zhu

A New Computer Virus Model with Impulsive Vaccination and Saturation Effect 178
Xianxiu Zhang and Chuandong Li

The Impact of Socio-Economic Factors on the City-Level China Tnternet Structure 185
Zhengping Fan, Huaibo Jian and Guanrong Chen

Consensus of Multi-agent Systems with Distributed Fractional Order Dynamics 190
G. Nava-Antonio, G. Fernández-Anaya and E. G. Hernández-Martínez

On Reaching Weighted Consensus for Second-Order Delayed Multi-Agent Systems 198
Lianghao Ji, Yukun Geng and Yu Dai

Improved One-class Collaborative Filtering for Online Recommendation . 205
Zhefu Wu, Agyemang Paul, Minyu Chan, Hongxu Zhou and Yun Xiang

New Synchronization Criteria for Memristor-based Recurrent Neural Networks with Mixed Delays 210
Xiangxiang Wang, Yongbin Yu, Shouming Zhong and Tashi Nyima

Global Dissipativity of Fractional-Order Delayed Neural Networks with Coupling 218
Xiaoshuai Ding and Jinde Cao

Observer-based Tracking Control for Heterogeneous Dynamical Systems under Asynchronous Attacks 224
Ying Wan and Jinde Cao

Comparing Different Models for Investigating Cascading Failures in Power Systems 230
Chao Zhai, Hehong Zhang, and Gaoxi Xiao and Tso-Chien Pan

A Diffusional Distributed Multiple Path Algorithm for Complex Networks 237
Guang Chen, Guanghui Wen, Hong-Xiang Hu and Wenwu Yu

Double Layered Recommendation Algorithm Based on Fast Density Clustering: Case Study on Yelp Social Networks Dataset 242
Jinyin Chen, Xiang Lin, Yangyang Wu, Yixian Chen, Haibin Zheng, Mengmeng Su, Shanqing Yu and Zhongyuan Ruan

Distributed Convex Optimization with a Row-Stochastic Matrix over Directed Graphs 253
Yanan Zhang, Qingguo Lü, Huaqing Li and Hao Zhang

Characteristic Modelling Approach based Sliding-mode Control 260
Long Xu, Lei Chen and Guanghui Wen

Global Exponential Stability and Synchronization of Memristive Neural Networks Including both Time-Varying and Continuously Distributed Delays 266
Wengui Yang, Wenwu Yu, Tingwen Huang and Jinde Cao

A Patient Monitoring System Based on Agent Technology under JADE . . 274
Riad Bourbia, Lynda Dib and Ala-Eddine Benrazek

Analysis of Gender Motifs in Online Yelp Friendship Network 279
Shanqing Yu, Jinhuan Wang, Deng Zhang and Beilun Shen

Consensus of Linear Multi-Agent Systems by Distributed Dynamic Event-Triggered Control 284
Wenfeng Hu and Chunhua Yang

Distributed Saddle-Point Seeking via a Continuous-time Multi-Agent System 290
Shaofu Yang, Tingwen Huang, Huaqing Li and Wenfeng Hu

Designing Robust Distributed Average Tracking (DAT) Algorithms for Multi-Reference-Signals Produced by Lipschitz-Type Dynamics 296
Yu Zhao, Yongfang Liu and Guanghui Wen

Consensus for Second-Order Nonlinear Leader-Following Multi-Agent Systems via Event-Triggered Control 301
Haibo Du, Jun Zhou, Di Wu and Guanghui Wen

Driving-Based Generalized Synchronization in Two-Layer Networks via Adaptive Intermittent Pinning Control 306
Hongjie Li

Cooperative Guidance Law Design for Simultaneous Attack with Multiple Missiles under Directed Communication Topologies 313
Jialing Zhou, Yuezu Lv and Jianying Yang

Fault Estimation of Multi-Agent Systems with Transient Performance Improvement 319
Di Huang, Jin Chang and Yun Wang

A Novel Computer Virus Model with Generic Nonlinear Burst Rate 325
Xianxiu Zhang and Chuandong Li

Improved Spectral Clustering Collaborative Filtering with Node2vec Technology 330
Jinyin Chen, Yangyang Wu, Lu Fan, Xiang Lin, Haibin Zheng, Shanqing Yu, and Qi Xuan

The Research about Safety Culture Dissemination via ICB model 335
Jin Liu, Ziqiang Qiao and Zhengyang Wu

Research on the State Transformation of Components in a Mechanical System via Quantitative Analysis 341
Qi Han, Zhengyang Wu, Ziqiang Qiao and Jin Liu

Stability of Inertial Delayed Neural Networks with Impulsive Effect 347
Jiangtao Qi and Wei Zhang