

Complex cyber-physical networks: Resilient control, optimization and applications (CCPN)

It has been recognized that complex cyber-physical network (CCPN) is a new paradigm of complex networks, with many new and significant functions relying on tight interactions among its physical and cyber components. The study of CCPN has attracted considerable attention from various scientific and engineering fields. Computer scientists, control theorists and power engineers, in particular, have contributed to the development of CCPN, both in theory and in applications. Notably, the advances of CCPN in information and communication technology not only bring about benefits but also open opportunities for malicious attackers to launch coordinated attacks on critical cyber-physical facilities in networked infrastructures literally from any Internet-accessible place. Therefore, there is an urgent demand for security protection and security control. For this reason, novel attack detection and isolation, resilient control and optimization strategies and techniques should be comprehensively integrated into CCPN, which leads to the present study of security and control of CCPN.

This special issue aims to collect state-of-the-art achievements in the field of security and control of CCPN, aiming at further advancing CCPN theory and technology in related areas.

The topics of this special issue include, but are not limited to, the

following:

- Resilient control of CCPN under malicious attacks;
- Distributed optimization of CCPN under malicious attacks;
- Attack detection and isolation for CCPN;
- Local measurement-based distributed control;
- Fault-tolerant distributed control of constrained CCPN;
- Resilient event-triggered strategy and techniques for CCPN;
- Applications to power systems, robotic networks, transportation networks, etc.

Guest Editors

Peijun Wang, Anhui Normal University, pjwang@ahnu.edu.cn

Jialing Zhou, Beijing Institute of Technology, jialingz91@gmail.com

Wenying Xu, Southeast University, wyxu@seu.edu.cn

Junjie Fu, Southeast University, fujunjie89@gmail.com

Guanrong Chen, City University of Hong Kong, eegchen@cityu.edu.hk

Date of Submission Deadline –30.10.2023

Date First Review Round Completed –06.01.2024

Date Revised Manuscripts Due –15.03.2024

Date of Final Notification –15.05.2024