

CALL FOR PAPERS

Special Section on **Complex Systems Theory and Practice**

A complex system consists of many interacting parts that, through non-linear interactions, emerge with collective characteristics that individual parts do not have. Typical examples of complex systems are condensed matter systems, ecosystems, stock markets, economies, biological evolution, human societies, etc. Since the 1980s, substantial progress has been made in the study of complex systems through interdisciplinary research in physics, biology, computer simulation, and other fields. However, complex systems science is still a new discipline, and there are still a lot of problems and challenges to be solved. How do systems at different scales interact with each other? How does a small disturbance in a microscopic system cause a catastrophe in a macroscopic system? How do adaptive systems evolve with the environment? How can complex collective behavior emerge from simple individual interaction rules? What causes the evolution of life? Complex systems science is the key to understanding how the world works and answering many core questions about how life, ecology, society, and natural environment systems operate and evolve. Complex systems science also serves as a hammer to crack questions that cannot be explained by traditional science systems. Therefore, the special section on complex systems theory and practice is organized to attract research related to complex systems, especially those combined with artificial intelligence, big data, causal inference, scale-up modeling, complex networks, and dynamics models.

Scope of Topics

This special section aims to feature the recent developments of complex systems theory and practice and provide a platform for academic researchers and practicing engineers to share their latest research on the mechanism, theory, method, and practice of complex systems science. The topics of interest include, but are not limited to

- Modeling and characterization of dynamic complex systems
- Complex systems and complex networks
- Robustness & vulnerability of complex systems
- Evolution & adaptation of complex systems
- Collective behavior of complex systems
- Game theory concerning complex systems
- Self-organization & emergence mechanism of complex systems
- System-of-systems engineering theory and practice

Submission

Authors should prepare papers according to the **TEMPLATE** of Journal of Systems Engineering and Electronics, with reference to the Guide for Authors given at <https://www.jseepub.com/EN/1004-4132/home.shtml>, and submit the Word version of the complete manuscript through the online submission system. When submitting the paper, the title format should be "Title (Special Section on **Complex Systems Theory and Practice**)".

Important Dates

Manuscript Due

August 30, 2022

Final Review Notification

October 31, 2022

Possible Publication

December 31, 2022

Guest Editors

Prof. Dajun Zeng

Institute of Automation, Chinese Academy of Sciences, Beijing, China

E-mail: dajun.zeng@ia.ac.cn

Prof. Hongwei Wang

Huazhong University of Science and Technology, Wuhan, China

E-mail: hwwang@hust.edu.cn

Prof. Kewei Yang

National University of Defense Technology, Changsha, China

E-mail: kayyang27@nudt.edu.cn

Prof. Zengru Di

Beijing Normal University, Beijing, China

E-mail: zdi@bnu.edu.cn

Journal of Systems Engineering and Electronics, an open access journal on IEEE Xplore, publishes the latest theoretical and practical research results on electronic technology, radar, communication and network, systems engineering and analysis, control theory and analysis, reliability and other related topics. For more information, please visit JSEE website <http://www.jseepub.com>.