

# Special Issue

## Human Factors and Cognitive Engineering in Complex Systems

### Message from the Guest Editors

Asymmetry has been found ubiquitously in nature, economics, or human-machine interactions. Asymmetric features of information are of great importance to study complex human behaviors in complex socioeconomic systems. For example, an imbalance between a sender and a receiver of the information can lead to communication failures in a variety of activities. Symmetry also plays a fundamental role in understanding human-system-environment interactions and applying the human-center design principles to various complex problems. Asymmetry can cause increasing uncertainty when managing human-machine interactions and lead to significant accidents or failures of design in complex systems. For this Special Issue, we invite authors to submit their research on any aspects of asymmetry (or symmetry) that are critical to the description, modeling, analysis, or investigation of complex systems with a focus on human-machine interactions in the fields of human factors, ergonomics, safety, industrial sociology, applied psychology, cognitive engineering, and industrial engineering and management.

### Guest Editors

Prof. Dr. Atsuo Murata

Department of Intelligent Mechanical Systems, Graduate School of Natural Science and Technology, Okayama University, Okayama 700-8530, Japan

Prof. Dr. Waldemar Karwowski

Computational Neuroergonomics Laboratory, Department of Industrial Engineering and Management Systems, University of Central Florida, Orlando, FL 32816, USA

### Deadline for manuscript submissions

closed (31 March 2022)



# Symmetry

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.2  
CiteScore 5.3



[mdpi.com/si/92968](https://mdpi.com/si/92968)

*Symmetry*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[symmetry@mdpi.com](mailto:symmetry@mdpi.com)

[mdpi.com/journal/  
symmetry](https://mdpi.com/journal/symmetry)





# Symmetry

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.2  
CiteScore 5.3



[mdpi.com/journal/  
symmetry](https://mdpi.com/journal/symmetry)



## About the Journal

### Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

---

### Editor-in-Chief

Prof. Dr. Sergei Odintsov

1. ICREA, 08010 Barcelona, Spain

2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within SCIE (Web of Science), Scopus, CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

#### Journal Rank:

JCR - Q2 (Multidisciplinary Sciences) / CiteScore - Q1 (General Mathematics)