



## Asymmetric and Symmetric Study on Digital Twins and Cyber-Physical-Social Systems

Guest Editors:

**Prof. Dr. Jiewu Leng**

**Prof. Dr. Gang Xiong**

**Prof. Dr. Jinsong Bao**

**Prof. Dr. Qiang Liu**

Deadline for manuscript  
submissions:

**closed (31 December 2022)**

### Message from the Guest Editors

The scope of this Special Issue covers all topics related to digital twins and cyber-physical-social systems, including but not limited to:

- Asymmetries and symmetries in digital twins;
- Asymmetries and symmetries in cyber-physical-social systems;
- Social computing and social manufacturing;
- Parallel control and parallel society;
- Artificial intelligence in the digital twins;
- Innovative theory and model based on digital twins;
- Synchronization of the physical system and virtual model;
- Hardware-in-the-loop (semiphysical) simulation;
- Computationally efficient algorithms for online decisions;
- Blockchain-secured digital twins and cyber-physical-social systems;
- Case study on digital twins and cyber-physical-social systems;
- Performance evaluation of digital twins;
- Digital twins in industry;
- Society 5.0 and Industry 5.0.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Sergei Odintsov

ICREA, 08010 Barcelona and  
Institute of Space Sciences (IEEC-  
CSIC), C. Can Magrans s/n, 08193  
Barcelona, Spain

## 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.

## 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)

## Contact Us

---

Symmetry Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/symmetry  
symmetry@mdpi.com  
X@Symmetry\_MDPI