

## Special Issue

# Mathematical Physics: Topics and Advances

### Message from the Guest Editor

The concept of symmetry permeates all areas of science, and in fact, serves as the basis of any direction in scientific activity. Even in seemingly completely disordered and chaotic systems, the discovery of some regularities and symmetries is the greatest achievement. Most laws of nature are based on the observation of some sort of symmetry. Thus, symmetry is an absolutely interdisciplinary concept. However, the most expressive language for describing symmetry is mathematics. For example, algebras of operators acting on periodic lattices, or on fractal structures, are a powerful tool for revealing the symmetry properties of natural phenomena and physical processes. The present Special Issue is devoted to the application of various algebraic structures to problems of mechanics and physics. We are inviting authors working in such areas as: - Spectral theory; - Operator theory; - Linear waves in heterogeneous structures; - Non-linear waves, ocean waves; - Homogenization theory; - Representation theory.

### Guest Editor

Dr. Anton A. Kutsenko

Department of Mathematics & Logistics, Jacobs University, Campus Ring 1, 28759 Bremen, Germany

### Deadline for manuscript submissions

closed (30 April 2022)



## Symmetry

an Open Access Journal  
by MDPI

Impact Factor 2.2  
CiteScore 5.3



[mdpi.com/si/79264](https://mdpi.com/si/79264)

*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)