

# Special Issue

## Applications of Symmetry in Robotics and Mechanics

### Message from the Guest Editor

- We are pleased to announce the launch of the Special Issue “**Applications of Symmetry in Robotics and Mechanics**” in *Symmetry*. Symmetry principles play a fundamental role in advancing robotics and mechanical systems, offering elegant solutions to design, optimization, and functionality challenges. This Special Issue aims to highlight state-of-the-art research that leverages symmetry in areas such as kinematic and dynamic analysis, structural optimization, control strategies, and biomimetic designs.
- We welcome original research articles and comprehensive reviews exploring how symmetry contributes to novel methodologies and applications in robotics and mechanics. Symmetry not only enables the simplification of complex mechanisms but also enhances performance and adaptability in robotic systems. Research areas may include (but are not limited to) the following:
  - Symmetric mechanical design;
  - Symmetry-based motion planning;
  - Decoupled mechanisms and modular robotics;
  - Biological systems inspired by symmetric structures.

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### Guest Editor

Dr. Chunxu Tian

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### Deadline for manuscript submissions

closed (31 July 2025)



# Symmetry

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## 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.

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### Editor-in-Chief

Prof. Dr. Sergei Odintsov  
ICREA, 08010 Barcelona and Institute of Space Sciences (IEEC-CSIC),  
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