

Special Issue

Symmetry and Control of Discrete and Continuous Systems

Message from the Guest Editors

Physical theories derived from variational principle symmetries are a key feature because they reveal the existence of conserved quantities. This aspect has been fully investigated using modern geometric mechanics from the first ancestral results to more recent and fruitful notions. The presence of symmetries reduces the dimensionality of the system. In a different vein, a variational theory may account for externally imposed constraints on the system evolution by the Lagrange multipliers method. The geometry of constrained variational principles is described in terms of Lagrangian (or Legendre) submanifolds, and it has a pivotal role for the geometric formulation of thermodynamics and statistical mechanics via the maximum entropy principle. Moreover, constrained variational principles are at the core of the modern geometric formulation of control theory for mechanical systems, nonholonomic mechanics, optimal transport theory, and finite exact reduction. We think that the interplay between variational principles, conserved quantities and active control is a fruitful framework for theoretical development and the design of technological applications.

Guest Editors

Prof. Dr. Marco Favretti

Prof. Dr. Franco Cardin

Prof. Dr. Andrea Giacobbe

Deadline for manuscript submissions

closed (30 April 2022)



Symmetry

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 5.2



mdpi.com/si/84543

Symmetry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

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





Symmetry

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 5.2



[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
ICREA, 08010 Barcelona and 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)