Special Issue

High Energy Physics and Symmetries

Message from the Guest Editor

Starting from the global symmetries associated with particles or fields and moving to the more intricate local symmetries that extend to the space-time continuum, symmetries or their breaking are central to the progress made in theoretical physics.

The aim of the present Special Issue is to present the advances in field theories regarding the role of known symmetries or the implementation of new ones in modern field theories.

We are soliciting contributions (research and review papers) concerning local or global symmetries and their role in theoretical high-energy or gravitational physics, including, but not limited to, the following:

- An extension to the Poincare algebra and recent advances in supersymmetry;
- Space-time extensions with their symmetries;
- Dualities and equivalences in field theories, either particle or gravitational;
- The modern role of gauge symmetry with applications;
- Conservation laws in gravity, including new concepts and advances;
- New geometrical structures and symmetries in field theories.

Guest Editor

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Deadline for manuscript submissions

closed (30 April 2025)

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/156634

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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.

Editor-in-Chief

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