Special Issue

Noether Symmetries in Modified Gravity and Their Cosmological Consequences

Message from the Guest Editors

In classical physics, Noether's theorem effectively reveals the connection between the continuous symmetries of a physical system and its corresponding conserved quantities. The action of a physical system is the integral over time of a Lagrangian function, from which the system's behavior can be determined by the principle of least action. Furthermore, in quantum field theories, symmetries lead to relations between the Greens functions of the theory.

Going beyond Einstein's gravity navigates us to a broad class of modified theories of gravity, arising from violations of Lovelock's theorem. As a powerful method, the Noether symmetry approach plays a key role in addressing both theoretical and observational challenges of modified theories of gravity and uncovering symmetric properties of the cosmological phenomena.

This Special Issue aims to compile the original research papers and comprehensive reviews dedicated to the application of Noether symmetries in illuminating the hidden aspects of gravitational and cosmological situations within the framework of modified gravity. Submissions presenting new idea, theoretical advancements, and interdisciplinary approaches are welcomed.

Guest Editors

Dr. Mehdi Shokri

Canadian Quantum Research Center, 204-3002 32 Ave, Vernon, BC V1T 2L7, Canada

Prof. Dr. Salvatore Capozziello

Dipartimento di Fisica "E. Pancini", Università di Napoli "Federico II", Napoli, Italy

Deadline for manuscript submissions

30 September 2026

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

mdpi.com/si/266740

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

mdpi.com/journal/symmetry

Symmetry

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 5.3

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)

MDPI