symmetry

IMPACT FACTOR 2.2

CITESCORE 5.3

an Open Access Journal by MDPI

Symmetry in Quantum Theory of Gravity

Guest Editors:

Dr. Chris Fields
Allen Discovery Center, Tufts University, Medford, MA 02155, USA

Prof. Dr. Antonino Marciano
Center for Field Theory and Particle Physics and Department of Physics, Fudan University, Shanghai 200433, China

Deadline for manuscript submissions:
closed (15 December 2021)

Message from the Guest Editors

Dear Colleagues,

Symmetries are at the origin of modern comprehension of fundamental interactions in physics. Internal symmetries both dictate the dynamics of the degrees of freedom of quantum systems and specify how such systems interact. External symmetries—more precisely, diffeomorphism symmetries—provide strong constraints on physical observables, as accurately confirmed by a plethora of high-precision experiments. Our comprehension of quantum gravity models is thus intertwined with the fate of symmetries at high-energy (Planckian) scales. At the same time, the breakdown of global symmetries in quantum gravity might also lead to stringent phenomenological predictions, with observable implications on the mass spectroscopy of dark matter candidates. The reconceptualization of quantum theory in informational terms suggests, on the other hand, that all classical information, including local values of spacetime curvature, results from breaking a symmetry. This offers an appealing scenario in which the structure of spacetime itself could be emergent via some decoherence process or quantum field condensation...

mdpi.com/si/49076

Special Issue

symmetry

IMPACT FACTOR 2.2

CITESCORE 5.3

an Open Access Journal by MDPI

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

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.

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)

Contact Us

Symmetry Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/symmetry
symmetry@mdpi.com
X @Symmetry_MDPI