

Special Issue

Gauge Symmetry, Topology, and (Emergent) Quantum Fields

Message from the Guest Editor

Quantum field theories defined by a (non-abelian) gauge principle on 4D spacetime play a central role in our quantitative understanding of nature at its most fundamental level. The Standard Model of particle physics (SM), built upon this principle and largely developed within a perturbative framework, has been highly successful. For over 55 years, it has consistently matched data from collider experiments at the energy frontier. This Special Issue invites original research articles to address problems associated with questions (i) through (vi). Given the extensive literature on nonperturbative aspects of gauge theories and gravity, we also welcome comprehensive review articles that summarize developments within a specific research field.

Guest Editor

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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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