Special Issue

Symmetries and Quantum Chromodynamics

Message from the Guest Editor

Quantum Chromodynamics (QCD) is the fundamental theory of the strong interaction, yet its nonperturbative nature makes the study of hadron structure one of the most challenging problems in modern physics. With the progress of lattice QCD, high-energy experiments, and other nonperturbative methods, remarkable progress has been made in understanding the internal structure of mesons and baryons.

Symmetry has always provided key guidance in hadron physics, from the SU(3) flavor symmetry of the quark model to more concepts such as chiral symmetry, heavy-quark spin symmetry, and hidden local symmetry. Symmetry principles also underpin many theoretical and computational approaches to hadron structure.

This Special Issue aims to collect original research articles and reviews on hadron structure from the perspective of symmetry, including lattice QCD calculations, phenomenological models, and experimental analyses. Contributions that highlight the role of symmetry in advancing our understanding of QCD and hadron structure are especially welcome.

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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