

Special Issue

Physics and Symmetries of Commutative and Noncommutative Quantum Field Theory

Message from the Guest Editor

Quantum field theory (QFT) is a theoretical framework that combines classical field theory and quantum mechanical principles to describe the nature around us. It has been extremely successful in constructing physical models in particle physics (especially the QED and Standard model) and condensed matter physics, and has important implications in quantum aspects of gravity theories. Even though QFT has had much success in explaining phenomenological phenomena, its mathematical rigor (in some aspects) is still a topic of interest and work for many mathematical physicists. Noncommutative geometry and noncommutative QFTs have promising results in explaining the geometry of particle interactions, providing a framework even for quantum aspects of gravity and even lifting the theory to a more rigorous formulation.

This Special Issue will publish contributions on various aspects of commutative and noncommutative QFTs, studying the interplay between them, and their applications in the quantum aspects of spacetime. The articles are expected ...

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.

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