Special Issue

Symmetry and Asymmetry in Quantum Models

Message from the Guest Editors

Quantum mechanics has become a universal language for microscopic models, from elementary particles to nuclear, molecular, and solid state physics. The identification of the underlying symmetries of the system is directly connected with conservation laws. The symmetry breaking, on the other hand, indicates the existence of a characteristic energy scale, above which the system exhibits different properties. This Special Issue aims at collecting reports on theoretical works, including, but not limited to, topics such as

- Symmetries in standard and exotic elementary particle models including neutrino masses and mixing in the Standard Model and beyond;
- Symmetries in nuclear models;
- Symmetries in solid state physics;
- Symmetries in quantum mechanics including the time evolution of quantum systems, entanglement, and many-body interactions;
- Symmetries in quantum information theory including the problem of measurement and the reversibility of qubit operations.

Guest Editors

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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

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