Special Issue

Symmetry/Asymmetry in Quantum Mechanics

Message from the Guest Editor

Symmetry plays a pivotal role in both classical and quantum mechanics. This property is typically associated with conservation equations and conserved quantum numbers, such as angular momentum conservation. Symmetry breaking is sometimes intricately linked with phase transitions, as observed in phenomena like deconfined phase transitions. Therefore, studying symmetry-related issues in classical and particularly quantum mechanics is crucial. In data processing, symmetry also holds significance in constructing deep neural networks. Leveraging symmetry can notably enhance the performance of these deep neural networks. The Special Issue covers topics concerning symmetry conservation, symmetry breaking, and the conservation of quantum numbers. Additionally, it explores the applications of symmetry in matrix operations and deep learning networks, as well as in data processing.

Guest Editor

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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.

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