Special Issue

Symmetry Breaking in Bose-Einstein Condensates

Message from the Guest Editor

Bose-Einstein condensation is usually associated with spontaneous symmetry breaking (SSB) and off-diagonal long-range order (ODLRO). However, in systems with reduced dimensionality, quantum fluctuations make the SSB and ODLRO concepts more elusive, and new paradigms, such as quantum phase transition, quasi-condensate, and topological order, are needed. These new paradigms are also expected to play a crucial role in the presence of disorder, multi-components, Bose-Fermi mixtures, spin-orbit and Rabi couplings, long-range interaction potentials, and exotic confinements. The objective of the present Special Issue is to publish original papers and reviews which adequately represent the ongoing progress in this vast research area.

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.

Editor-in-Chief

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