Special Issue

Symmetry/Asymmetry in Condensed Matter Physics

Message from the Guest Editors

Dear Colleagues: Symmetry and asymmetry are fundamental concepts in condensed matter physics, underpinning the emergence of complex phases, topological states, and collective excitations. The investigation of how symmetry is preserved, spontaneously broken, or explicitly broken offers crucial insight into the properties of materials and the mechanisms driving new phenomena. This Special Issue will focus on both theoretical and experimental advances in the understanding of symmetry and asymmetry in condensed matter systems. We invite contributions addressing a broad range of topics, including, but not limited to, the following: * Spontaneous symmetry breaking in quantum materials; * Topological phases and topological insulators; * Symmetry-protected states and topological order; * Charge density waves and structural phase transitions; * Magnetism, spin textures, and skyrmions; * Superconductivity and unconventional pairing symmetry; * Symmetry breaking at interfaces and in low-dimensional systems; * Emergent phenomena from symmetry reduction in engineered structures; * Computational and analytical methods for symmetry analysis. ...

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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