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Symmetry and Topology in Condensed Matter Physics

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Message from the Guest Editors

Symmetry and topology play fundamental roles in modern condensed matter physics, providing powerful frameworks for understanding the behavior of materials and the emergence of novel physical phenomena. In that respect, the interplay and synergy between symmetry and topology is particularly intriguing. Symmetry can protect or enforce certain topological properties in materials, leading to the discovery of new classes of topological materials, while symmetry-breaking processes, spontaneous or induced from the outside, can engender topological phase transitions. Within condensed matter physics, it has opened up new avenues for discovering and understanding materials with unique electronic, optical, and transport properties.

This Special Issue of *Symmetry* will focus on the selected topics of interplay between symmetry and topology related to condensed matter systems. You are welcome either in the form of short reviews or original papers.

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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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