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## Symmetry Versus Symmetry Breaking: From Synchronization to Non-equilibrium Phase Transitions

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submissions:

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### Message from the Guest Editor

Dear Colleagues,

Recent studies of complex systems have revealed the rich collective behaviors that emerge due to the competition and collaborations of elements in various systems. The transition to ordered state physically implies some spontaneous symmetry breaking. This scenario is universally applicable in general complex systems under non-equilibrium conditions.

The present Special Issue welcomes studies on synchronization and partial synchronization, coexisting coherence–incoherence chimeras, transitions among various ordered states, and transitions to chaos in high-dimensional dynamical systems, due to the variation of dynamical or topological symmetries. Experimental studies or results that are closely related to realistic situations are highly welcome.

Prof. Dr. Zhigang Zheng

*Guest Editor*



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# Special Issue



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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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