Special Issue

Emergent Dynamics of Complex Systems: From Synchronization to Clustering

Message from the Guest Editor

Complex systems, which are prevalent in nature and human society, exhibit fascinating emergent behaviors, e.g., phase transition, synchronization, clustering, chimeras, nonlinear waves, and swarming dynamics. Understanding the mechanism embedded in these behaviors is crucial for various fields, including physics, biology, and engineering. This Special Issue aims to bring together researchers to explore the emergent dynamics of complex systems, focusing on the dynamics and statistical physics of synchronization, clustering, and swarming phenomena. We invite submissions that investigate the underlying mechanisms, mathematical models, and real-world applications related to these topics. We are interested in a wide range of research areas, such as the synchronization of coupled oscillators, the formation of clusters in social and biological networks, and the swarming dynamics of active particles. Both theoretical and empirical studies are welcome. We also encourage interdisciplinary approaches that combine methods from different disciplines to provide new insights into the emergent dynamics of complex systems.

Guest Editor

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Editor-in-Chief

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