Special Issue

Entanglement in Quantum Spin Systems

Message from the Guest Editor

In recent years, there has been a surge of interest in unraveling the entanglement properties of quantum spin systems. From the XXZ model with integer and half-integer spin to the Hubbard model and Bose–Hubbard systems, researchers have delved into understanding the intricacies of these systems, including their non-equilibrium behavior. This special issue aims to shed light on the interplay between quantum entanglement and quantum phase transitions in both equilibrium and non-equilibrium quantum spin systems. We invite researchers to contribute their original research articles, reviews, or theoretical works to this special issue. Potential topics of interest include:

- Entanglement properties in the XXZ, Hubbard, and Bose–Hubbard models
- Exploration of non-equilibrium quantum spin systems
- Influence of spin value and lattice geometry on entanglement characteristics
- Effects of different types of interactions within spin systems
- Quantum and topological phase transitions induced by system couplings
- Analysis of bipartite entanglement near critical points
- Application of entanglement measures in quantum spin systems

Guest Editor

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The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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