Special Issue

Non-Markovian Open Quantum Systems

Message from the Guest Editor

The rapid advancement of experimental quantum technology and its application to the fabrication and manipulation of quantum devices have sparked renewed interest in the theory of non-Markovian open quantum systems. Understanding the temporal behaviors of these systems is crucial for addressing fundamental issues such as quantum dissipation, decoherence, quantum control, and quantum transport processes across different time scales. However, the widespread application of non-Markovian open quantum systems also presents significant challenges in characterizing and detecting quantum memory effects. For instance, non-Markovian quantum memory represents a promising frontier for enhancing quantum coherence time and generating robust entanglement, significantly boosting quantum processing capabilities and paving the way for more reliable quantum devices. This special issue aims to explore the opportunities and challenges presented by recent advancements in non-Markovian open systems and their applications within the realm of quantum science and technology. We invite researchers and educators to contribute original research articles to this special issue.

Guest Editor

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Editor-in-Chief

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