Quantum Control and Machine Learning in Quantum Technology

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Message from the Guest Editors

Quantum control refers to the manipulation and control of quantum systems to achieve specific objectives such as enhancing coherence or preparing desired dynamics. It plays a critical role in regulating dynamic processes in various fields, such as quantum optical systems, quantum computing, and other quantum technology applications, by mitigating the effects of noise and decoherence. In recent years, machine learning optimization techniques have become increasingly popular in this field, particularly in the optimization of complex and time-consuming quantum control protocols. Researchers have made noteworthy strides in quantum control by applying classical machine learning to iteratively enhance control strategies and learn from data. Quantum machine learning aims to leverage the unique properties of quantum computing. The confluence of quantum control and machine learning with quantum technologies provides a fertile ground for future research and innovation. Thus, this Special Issue aims to merge recent advances in cutting-edge machine learning and quantum control techniques for quantum optics, quantum computing, and beyond.

Special Issue

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Message from the Editor-in-Chief

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