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Quantum Computing for Complex Dynamics

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Message from the Guest Editors

Dear Colleagues,

As of the 1980s, physicists combined a quantum mechanical model to computer science, called quantum computers. The quantum computers could perform much better than a classical computer. Since then, the research on quantum computation has been growing rapidly, both in architecture and algorithms.

The complex dynamics are known for their complexity, chaos, and randomness, which widely exist in the field of cryptography, communication, chemistry, and so on. It is hard for classic computers to deal with complex dynamics, while quantum computers act as an ideal tool to calculate and simulate it.

This Special Issue mainly focus on the state-of-the-art of the research in quantum computation and quantum algorithms, in particular, for the computation of the complex dynamics.

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Message from the Editor-in-Chief

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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