Quantum Computing Algorithms and Quantum Computing Simulators

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Message from the Guest Editors

Quantum computing is a hot field of research at the intersection of mathematics, computer science, and physics that promises to significantly revolutionize many technological aspects associated with medicine, ML, AI, and operations research, among others.

Investors and governments from all over the world promote its development, assuming beyond any doubt its strategic importance. In this sense, they dedicate a lot of resources to developing quantum computing in countries such as China, India, the US, etc.

Nevertheless, its level of development does not correspond to that of a mature discipline, especially at the hardware level where the decoherence quantitatively hinders the implementation of universal quantum computing without restrictions.

The above reason reinforces the importance of quantum computing simulation as a platform for learning, training, and testing quantum algorithms. Quantum computing simulators necessarily involve aspects of high-performance computing, as well as applied mathematics.

We dedicate this Special Issue to quantum computing and some related aspects:

- Quantum algorithms
- Quantum computing
- Computational complexity
- Quantum computing simulation

Special Issue

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Message from the Editor-in-Chief

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