Special Issue

Mathematical Structures in Quantum Information and Photonics: From Foundations to Applications

Message from the Guest Editor

Quantum information and photonics are rapidly advancing fields at the intersection of mathematics, physics, and engineering. Theoretical models and mathematical frameworks are crucial in understanding and designing quantum systems, from quantum communication protocols to photonic implementations of quantum computing. This Special Issue of *AppliedMath*, titled "Mathematical Structures in Quantum Information and Photonics: From Foundations to Applications", aims to bring together contributions that explore the mathematical foundations of quantum technologies and their practical implementations.

We invite submissions that address fundamental models, novel mathematical frameworks, and applied results related to quantum information theory, quantum optics, entanglement, quantum computing, and network design. Both theoretical and interdisciplinary studies are welcome, including works that link mathematics to experimental and engineering applications in quantum photonics.

Guest Editor

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Message from the Editor-in-Chief

Mathematics permeates all kinds of academic worlds and is a fountain flowing with innovative development. The journal *AppliedMath*, publishing high-quality refereed papers discussing various aspects of applied mathematics, is dedicated to promoting the integration of mathematics with applied disciplines to cultivate a profitable frontier of mathematics. The journal highlights articles devoted to the mathematical treatment of questions and phenomena arising in physics, chemistry, biology, medicine, pharmacy, engineering, information science, social sciences, and humanities. One of the missions of this journal is to serve scientists by quickly announcing the seeds of significant mathematical breakthroughs in science and technology.

Editor-in-Chief

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