

Special Issue

Advances in Mathematical Methods of Quantum Mechanics

Message from the Guest Editor

This Special Issue welcomes contributions in three interconnected areas of mathematical quantum mechanics: Theoretical Foundations invites papers on rigorous mathematical structures underlying quantum phenomena, including operator theory, spectral and functional analysis, geometric methods, quantum field theory mathematics, non-commutative geometry, infinite-dimensional Hilbert spaces, topological quantum states, and category-theoretic formulations. **Computational Methods** focuses on advanced numerical techniques for quantum problems, such as quantum simulation algorithms, machine learning applications, tensor networks, quantum Monte Carlo, density functional theory, and variational quantum algorithms for quantum chemistry and condensed matter physics. **Emerging Applications** highlights mathematical frameworks for quantum technologies and interdisciplinary areas, including quantum information theory, computing algorithms, cryptography, sensing, quantum machine learning, and quantum-inspired classical methods spanning biology to economics.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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