

Special Issue

Applications of Mathematical Methods in Quantum Mechanics

Message from the Guest Editor

Quantum mechanics is the most accurate physical theory discovered to date to explain nature. Like any physical theory, quantum mechanics has two interrelated components—mathematical formalism and physical interpretations. This Special Issue looks for novel developments of mathematical analyses involved in quantum mechanics, including, but not limited to:

- Deriving new uncertainty relations;
- Mathematical frameworks developing experimental tests of Bell nonlocality;
- Fundamental mathematical structure of entanglement theory;
- Mathematical development of LOCC distinguishability;
- Studying spatial quantum correlations in the context of no-signalling polytope;
- Mathematical descriptions of temporal quantum correlations;
- Improving the mathematical formalism of generalized quantum measurements and measurement incompatibility;
- Quantum channel, CPTP map.

Guest Editor

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Deadline for manuscript submissions

closed (31 October 2024)



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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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manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.3 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).