

Special Issue

Advances in Mathematics for Quantum Mechanics

Message from the Guest Editor

The current year, 2025, has been recognized as the International Year for the establishment of quantum mechanics as a systematic and well-developed physical theory. The theory has undergone many technological advances and applications in the last 100 years.

However, it still lacks a unified interpretation (if such a thing is possible), and new formal and theoretical developments are proposed regularly. Thus, we invite you to contribute to this Special Issue titled “Advances in Mathematics for Quantum Mechanics”. We desire original research focused on theoretical and/or mathematical contributions that advance our understanding of quantum mechanics, its interpretation, formalism, and status as a formally based branch of epistemology.

- mathematical foundations of quantum information and computation
- operator algebras and spectral theory in quantum systems
- stochastic methods and open quantum systems
- foundations of quantum mechanics
- new advances in quantum mechanics
- formal developments in quantum mechanics
- philosophical developments in quantum mechanics

Guest Editor

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Deadline for manuscript submissions

31 May 2026



Mathematics

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 4.6



mdpi.com/si/249619

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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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Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).