

# Special Issue

## Mathematical Analysis and Its Application in Astrophysics

### Message from the Guest Editor

Since the origin of natural science, mathematics has co-developed with astrophysics. Many well-known mathematicians, including Leonhard Euler, Joseph-Louis Lagrange, etc., are also astrophysicists. In recent years, more data about astronomical observations about black holes, cosmology, and other phenomena have been accumulated. Along with these observations, mathematical analysis has played and continues to play a very important role. In addition, deeper mathematical analyses will help people to understand the observational data and explore the fundamental problems. This Special Issue will gather a collection of articles about mathematical developments related to astrophysical phenomena, including gravitational waves, cosmology, compact objects, accretion disks, and related topics. Theoretical, simulation, and data analysis-related contributions are welcome. The selection criteria consider the formal and technical soundness, experimental support, and the relevance of the contributions.

### Guest Editor

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### Deadline for manuscript submissions

closed (28 February 2025)



## Mathematics

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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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### Editor-in-Chief

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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).