Special Issue

Mathematical Modeling and Numerical Analysis in Fluid Dynamics

Message from the Guest Editor

Fluid dynamics plays a pivotal role in understanding and predicting the behaviour of fluids across various scales and applications. The complexity of fluid flow phenomena, governed by nonlinear partial differential equations such as the Navier–Stokes equations, necessitates advanced mathematical modelling and numerical analysis to achieve accurate and efficient solutions. This Special Issue aims to present cutting-edge research that advances the theoretical and computational aspects of fluid dynamics. We invite contributions that focus on the development of novel mathematical models, the rigorous analysis of existing models, and the creation or enhancement of numerical methods tailored to fluid flow problems. Submissions that bridge the gap between theory and application, demonstrating the practical impact of mathematical and numerical innovations in real-world fluid dynamics scenarios, are particularly encouraged.

Guest Editor

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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 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).

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