

Special Issue

Advances in Computational Fluid Dynamics and Turbulence

Message from the Guest Editors

Turbulence is present everywhere—in cumulus clouds in the sky, rolling waves in the sea, curling smoke and cascading waterfalls. Turbulence has been regarded as the most important unsolved problem in classical physics and has attracted extensive attention from scientific and engineering fields. In this context, this Special Issue invites authors to propose original works regarding the development of computational fluid dynamics and turbulence or vortex theory, either based on mathematical techniques or on specific numerical models, devoted to the treatment of scientific and engineering applications. Particular interest will be given to innovative works focusing on the design of mathematical/computational tools, as well as on specific applications requiring the adaptation and use of CFD techniques. Topics include but are not limited to:

- Novel numerical simulation methods;
- Statistical characteristics;
- Vortex dynamics;
- Computational fluid dynamics;
- Hybrid algorithms;
- Turbulence and particles;
- Turbulence and bubbles;
- Turbulence and boundary layers;
- Convection and diffusion;
- Turbulence in hydraulic machinery.

Guest Editors

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Deadline for manuscript submissions

closed (15 April 2025)



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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 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).