

Special Issue

Numerical Methods for Fluid Dynamics

Message from the Guest Editor

The field of fluid dynamics is at a pivotal moment, driven by the development of exascale computing, advanced algorithms, and data-driven methodologies. While the Navier–Stokes equations remain the cornerstone, solving them for increasingly complex, multi-scale, and multi-physics problems demands a new generation of numerical techniques. This Special Issue aims to capture the state of the art and chart the future course of computational fluid dynamics (CFD), highlighting innovations that enhance accuracy, efficiency, and applicability across science and engineering. This Issue will highlight research spanning the complete spectrum from fundamental algorithm development to cutting-edge applications. Topics of interest include, but are not limited to, the following:

- Novel discretization schemes and solver technologies;
- Advanced turbulence modeling strategies;
- Innovative approaches for multiphase flows and fluid-structure interaction;
- Algorithms for high performance computing;
- Applications in areas such as aerospace engineering, fluid machinery, energy sector, and ocean engineering.

Guest Editor

Dr. Shang-Gui Cai

1. Institute of Mechanics, Chinese Academy of Sciences, Beijing, China
2. School of Engineering Science, University of Chinese Academy of Sciences, Beijing, China

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Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

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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.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University,
The Gateway, Leicester LE1 9BH, UK

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