Special Issue

Computational Fluid Dynamics, 3rd Edition

Message from the Guest Editor

This Special Issue aims to present a curated collection of the latest advances, methodologies, and high-impact applications in CFD. It will serve as a platform for researchers and engineers to showcase cutting-edge developments, from high-fidelity solvers and turbulence modeling to GPU-accelerated computations, digital twins, and emerging paradigms such as AI-assisted simulations and quantum-enhanced solvers. Topics of interest include, but are not limited to, the following:

- Advances in numerical methods for compressible/incompressible, transitional and turbulent, and multiphase flows;
- High-order schemes, adaptive mesh refinement, and immersed boundary methods;
- CFD in modern hardware architectures (GPU, multi-core CPUs, and cloud platforms);
- Model reduction techniques and hybrid physics–AI approaches;
- The integration of machine learning for closure modeling, flow prediction, or optimization;
- Verification, validation, and uncertainty quantification in CFD;
- Quantum algorithms and future-forward concepts in CFD;
- Industrial and interdisciplinary applications— aerospace, automotive, biomedical, energy systems, climate modeling, etc.

Guest Editor

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Mathematics

MDPI

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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