Special Issue

Numerical and Process Modelling in Computational Fluid Dynamics

Message from the Guest Editors

The advancement of numerical modelling in Computational Fluid Dynamics (CFD) has been driven by the development of high-order discretization schemes, efficient solvers, and robust turbulence models. Recent studies have demonstrated improved accuracy and stability through spectral methods, finite element formulations, and high-resolution finite volume schemes. In addition, hybrid approaches combining deterministic and stochastic processes, such as uncertainty quantification and data-driven modelling, have enhanced the predictive capability of CFD simulations. These advancements are particularly relevant for mechanical engineering applications, including aerodynamics, thermal management, and fluid–structure interactions, where precise numerical solutions are critical for optimising performance and reliability. This Special Issue seeks high-quality works focusing on the latest novel advances in the following areas:

- Computational fluid mechanics;
- Computacional and applied mathematics;
- Heat and mass transfer applications with computational tools;
- Computational and applied solid mechanics;
- Computational wind engineering.

Guest Editors

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Editor-in-Chief

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