

## Special Issue

# Advanced Numerical Approaches for Multiphase and Cavitating Flows

### Message from the Guest Editor

Multiphase and cavitating flows are widely found in fluid engineering, such as gas-stirring vessels, oil-gas transportation, fluidized beds, pumps, hydraulic turbines, and so on. The numerical simulation of multiphase and cavitating flow is a challenging task due to the complexity and diversity of the physical phenomena involved. One of the main challenges in multiphase and cavitating flow simulation is the accurate representation of the interfaces between different phases. Another challenge is the modeling of turbulence. Turbulent multiphase flows exhibit a wide range of scales, and the interaction between these scales is not well understood. Multiphase flow simulations also require the coupling of different physical models, such as hydrodynamics, heat and mass transfer, and chemical reactions. This Special Issue aims to gather high-quality papers regarding the advanced numerical approaches that can well simulate the multiphase and cavitating flows, especially interfaces capturing and movement tracking, the multiscale and Eulerian–Lagrangian approaches, turbulence models, the complicated model considering chemical reactions, and so on.

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### Guest Editor

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### Deadline for manuscript submissions

closed (20 December 2025)



## Water

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### Editor-in-Chief

Dr. Jean-Luc PROBST

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