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.

Guest Editor

Dr. Linmin Li

Zhejiang Key Laboratory of Multiflow and Fluid Machinery, Zhejiang Sci-Tech University, Hangzhou 310018, China

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

mdpi.com/journal/water

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In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

Editor-in-Chief

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