Special Issue

Research on Fluid Flows: Modelling, Numerical Simulations, and Computational Dynamics

Message from the Guest Editor

Theoretical and modelling methods require suitable approximations; terms in the Navier–Stokes equation are neglected as judged by the nondimensional analysis of relevant forces, fluid stresses are averaged out in turbulent flows, and the compressibility of water is often neglected. Numerically, partial differential equations (PDEs) offer spatial resolution, ODEs track changes in time suitable for well-stirred reactors, and stochastic SDEs are used for uncertainty-driven problems. Validation against experiments is the ultimate test of every model, so statistical methods are used here to quantify differences between simulations and measurements. In this Special Issue, we plan to showcase a broad scope of fluid problems, from micro- to macrodomains, including (but not limited to) microfluidics, porous flows, and river turbulence. The aim is to feature a variety of useful theoretical and computational methods, including CFD, data-driven grey-box AI models, and perturbative approximations, [...]. For further reading, please follow the link to the Special Issue Website at: https://www.mdpi.com/journal/water/special_issues/Fluid_Flows_Simulations_Dynamics

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Message from the Editor-in-Chief

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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