Special Issue

Numerical Modeling of Hydrodynamics and Sediment Transport

Message from the Guest Editors

This Special Issue is a computational approach that simulates water flow and sediment movement. The numerical modeling involves solving governing equations, such as the Navier–Stokes equations and turbulence equations, to model fluid dynamics and additional equations for sediment transport processes. These models are all suitable based on the Euler or Lagrange method, single-phase flow or two-phase flow method. The models are structured with computational grids, applying boundary conditions to simulate flow and sediment dynamics over time. They are not limited to predicting (1) microscopic collision and friction and (2) macroscopic erosion, deposition, and distribution for graded and uniform sediment, with applications in river management, coastal engineering, and environmental planning. Challenges include computational efficiency, accuracy, and handling complex geometries, often requiring validation against field data or experiments. Your contributions should also encompass water resource management, cost-effective simulations, environmental conservation, climate change adaptation, and the development of specialized models tailored for diverse environments.

Guest Editors

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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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