Special Issue

Experimental and Numerical Investigation of Flow-Structure Interactions in Hydraulic, Coastal, and Ocean Engineering

Message from the Guest Editors

This Special Issue focuses on advancing research into flow-structure interaction (FSI) phenomena in hydraulic, coastal, and ocean environments. The scope spans experimental, numerical, and hybrid methodologies to address challenges in fluid dynamics, structural resilience, and multiphysics modeling. Key topics include (1) wave-structure interactions, (2) sediment transport, (3) offshore/coastal infrastructure performance, and (4) extreme event impacts (e.g., storms, tsunamis). The purpose of this Special Issue is to foster interdisciplinary collaboration, bridge gaps between laboratory-scale experiments and field-scale simulations, and promote sustainable engineering solutions for fluid-driven systems. By linking hydrodynamic analyses to socio-economic metricssuch as cost-benefit assessments of nature-based solutions or policy-guided coastal management—this Issue advances tools for measuring and monitoring sustainability. It also highlights regulatory and technological innovations to balance ecological preservation with infrastructural demands, supporting integrated approaches to sustainable development in aquatic environments.

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Deadline for manuscript submissions

30 June 2026



Sustainability

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Editor-in-Chief

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