

Special Issue

Advances in Marine Hydrodynamics and Multiphysics CFD: Innovations in Analysis, AI Applications and Energy Systems

Message from the Guest Editors

This Special Issue focuses on the latest advancements in marine hydrodynamics and multiphysical computational fluid dynamics (CFD), emphasizing its transformative applications across a range of marine and ocean engineering challenges. Topics of interest include the integration of the fluid–structure interaction, heat transfer, turbulence, and multiphase flow phenomena with emerging technologies such as artificial intelligence (AI) for enhanced modeling and analysis. We aim to address critical topics, such as cryogenic fluid dynamics, fuel cell systems, renewable energy devices, and advanced propulsion systems, as well as their applications in extreme marine environments. Studies combining numerical simulations, AI-based optimizations, experimental validations, and industrial case studies are highly encouraged. This Special Issue seeks to foster innovation in solving complex problems related to energy efficiency, environmental sustainability, and structural integrity in marine and offshore engineering.

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About the Journal

Message from the Editor-in-Chief

Journal of Marine Science and Engineering (JMSE, ISSN: 2077-1312) focuses on research in the fields of Ocean Engineering, Coastal Engineering, Physical Oceanography, Geological Oceanography, Marine Biology, and Marine Environmental Science. It publishes reviews, regular research papers, and short communications, as well as Special Issues on particular subjects. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the maximum length of the papers.

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