Special Issue

Advanced Studies in Ship Fluid Mechanics

Message from the Guest Editor

The field of ship fluid mechanics is advancing rapidly with transformative technologies that are reshaping hydrodynamic analysis and ship design. High-fidelity CFD, including hybrid RANS-LES, high-order methods, and lattice Boltzmann approaches, offers the precise modeling of turbulent and multiphase flows. Adjoint solvers and multidisciplinary design optimization (MDO) frameworks have enabled the holistic optimization of hydrodynamic performance, structural integrity, and sustainability. Artificial intelligence (AI) and machine learning are revolutionizing the field with predictive modeling, real-time simulations, and surrogate models, significantly reducing computational costs. This Special Issue aims to serve as a platform for showcasing innovative research and advancements in fluid dynamics and its diverse applications. It emphasizes recent progress in both fundamental fluid dynamics and their practical implementations across various domains of naval architecture, ocean, and marine engineering. The focus is on the latest theoretical, computational, and experimental contributions to all facets of marine hydrodynamics.

Guest Editor

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Message from the Editor-in-Chief

The *Journal of Marine Science and Engineering* (*JMSE*; ISSN 2077-1312) is an international peer-reviewed open access journal which provides an advanced forum for studies related to marine science and engineering. The journal aims to provide scholarly research on a range of topics, including ocean engineering, chemical oceanography, physical oceanography, marine biology and marine geosciences. We invite you to publish in our journal sharing your important research findings with the global ocean community.

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