# Special Issue

## Advances in Numerical Modeling of Coupled CFD Problems

### Message from the Guest Editors

The development of numerical methods for coupled problems in fluid mechanics remains an area of active research due to numerous complexities faced therein. These include moving and deforming boundaries as well as the coexistence of physical phenomena of different scales. Additionally, practitioners require technologies capable of providing reliable results in a feasible amount of time. The present Special Issue is devoted to highlighting the latest advances in the numerical modeling of complex coupled CFD problems, particularly fluid-structure interactions and two-phase flows. Such multiphysics systems exist in many applications of relevance for marine and ocean engineering, ranging from large-scale ones, such as sea waves interacting with off-shore structures, to small-scale phenomena, such as cavitations affecting marine engines. The Special Issue welcomes both works reporting advances in numerical methods relevant to the above-mentioned area as well as simulations of real-life problems, revealing important physical insights. Innovative solution algorithms, including data-driven approaches and HPC-oriented implementations, are particularly welcome.

### Guest Editors

Dr. Pavel B. Ryzhakov

Dr. Mohammad Reza Hashemi

Dr. Julio Marti

### Deadline for manuscript submissions

closed (1 July 2023)

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# About the Journal

## 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.

## Editor-in-Chief

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