Advances in Numerical Modeling of Coupled CFD Problems

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Message from the Guest Editors

Dear Colleagues,

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.

Special Issue

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Message from the Editor-in-Chief

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