



# Mathematical Problems in Engineering

## Special Issue on **Mathematical Modeling of Fluid and Structure Interaction in Ocean Engineering**

# CALL FOR PAPERS

Ocean engineering structures are subject to various ocean flows, including water waves, tidal currents, and winds and their coupling effects. Typical ocean structures include large scale offshore platforms, very large floating structures, long flexible pipes and mooring lines, breakwaters, and renewable energy devices. These structures have to be designed to withstand extreme environmental conditions. Understanding the physics behind the interactions between fluid flow and structures in ocean environment is of utmost importance for the engineering design and field operations, which requires analysis based on advanced mathematical theories and methods.

The aim of this special issue is to provide an opportunity for the researchers to publish their original research and review articles that will stimulate the development of mathematical modeling and consequently advance the understanding of physical mechanisms of fluid-structure interactions in ocean engineering. You are warmly invited to submit your fundamental and applied work which involves mathematical or computational methods. The articles that describe novel analytical methods and numerical techniques are especially welcomed. Articles dealing with experiments will be considered if the experimental results were presented as necessary validations of the mathematical models.

Potential topics include, but are not limited to:

- ▶ Recent developments of mathematical modeling for ocean engineering
- ▶ Analytical and semianalytical method in potential flow theory
- ▶ Nonlinear potential flow models for wave and structure interaction
- ▶ Computational fluid dynamics for ocean hydrodynamics
- ▶ Mesh free methods for strong nonlinear fluid and structure interaction

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/mpe/mmfs/>.

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