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# Numerical Analysis and Modeling of Floating Structures

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This reprint highlights the growing importance of floating systems, as offshore engineering continues to expand into deeper waters and more challenging marine environments. Floating structures, used across applications such as renewable energy, transportation, coastal protection, and aquaculture, present significant engineering challenges due to their inherently dynamic behavior and the complex coupling of hydrodynamic, aerodynamic, structural, and mooring interactions. The ten contributions in this volume demonstrate how advances in numerical methods, particularly computational fluid dynamics (CFDs) and integrated multi-physics modeling, enable more accurate prediction and analysis of these systems under realistic environmental conditions. Spanning four thematic areas encompassing (1) energy infrastructure, (2) transportation systems, (3) coastal resilience, and (4) aquaculture, the collected works showcase state-of-the-art approaches to understanding performance, improving safety, and optimizing design. Together, they reflect both the breadth of current research and the critical role of computational modeling in advancing the reliability and efficiency of floating structures across diverse fields of application.



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