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Special Issue on Data-Driven Mechanics and Digital Twins for Ocean Engineering

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[*ASME Journal of Offshore Mechanics and Arctic Engineering*](#)

Special Issue on Data-Driven Mechanics and Digital Twins for Ocean Engineering

Digital twin technology has emerged as a revolutionary concept for next-generation marine vehicles and offshore/arctic systems. In recent years, advancements in machine learning (ML) methods, sensor technology, the Internet of things, cloud computing, data acquisition and transmission of massive data along with superior computing power have propelled the development of digital twin technology. Aligning with these emerging trends, one of the key aims of this Special Issue is the symbiosis of traditional measurements and modeling methods (e.g., computational fluid dynamics and finite element analysis) with data-driven artificial intelligence (AI) and ML techniques for reliable and efficient dynamical predictions (e.g., fluid-structure interaction) in large-scale parametric analysis, uncertainty quantification, optimization, and control.

The Special Issue seeks to compile recent advances in data-driven techniques and AI/ML techniques in offshore mechanics and arctic engineering, and showcase the application of these methods in a variety of challenging problems related to digital twin technology.

Topic Areas

Topics of greatest interest include, but are not limited to, the following areas:

- Mechanistic machine learning
- Reduced-order modeling
- Digital twins
- Fluid-structure interaction
- Computational fluid dynamics
- Finite element analysis
- Optimization and control
- Uncertainty quantification

Publication Target Dates

Paper submission deadline	May 31, 2022
Initial review completed	August 30, 2022
Special Issue publication date	December 2022

Submission Instructions

Papers should be submitted electronically to the journal at journaltool.asme.org. If you already have an account, log in as author and select **Submit Paper** at the bottom of the page. If you do not have an account, select **Submissions** and follow the steps. In either case, at the **Paper Submittal** page, select the [*ASME Journal of Offshore Mechanics and Arctic Engineering*](#) and then select the Special Issue **Data-Driven Mechanics and Digital Twins for Ocean Engineering**.

Papers received after the deadline or papers not selected for inclusion in the Special Issue may be accepted for publication in a regular issue.

Guest Editor

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