



Special ISOPE-2023 Sessions in Hydrodynamics on

The 2nd Intelligent Hydrodynamics Symposium**First CALL FOR PAPERS**

In recent decades, the world has witnessed an explosive progress of AI/ML. These new technologies offer a wealth of techniques to discover patterns in high-dimensional data, which provides a tangible solution to understand and control the complex nonlinear marine hydrodynamics and fluid-structure interaction (FSI) at a greater scale and a broader scope. However, most of the approaches so far are black boxes and their generalizability, interpretability and robustness remain an open challenge, and hence difficult to be implemented in the industry. Therefore, we invite your contribution in all aspects of data-driven/scientific/statistical learning for marine hydrodynamics to the inaugural special sessions.

Topics include, but are not limited to:

Machine-Learning Method and Application for Hydrodynamics:

Data-driven modelling
Physics-informed ML
New learning algorithms for turbulence modeling

Sensing, Control and Optimization:

Flow control, sensing and optimization
Reinforcement learning for active flow control

Measurement and Visualization:

Uncertainty quantification
ML-assisted flow visualization

Smart System Development:

Cyber-physical system for fluid experiments
AI/ML implementation in experiments and simulation

Welcome to the sessions to present your own findings. Discuss with colleagues from academia and industry from around the world. The culture of these special sessions is to vigorously discuss all presentations and thus promote the scientific exchange as part of the annual ISOPE conference with more than 1,000 participants each year: www.isopec.org.

We, ISOPE and the Special Session Organizing Committee invite colleagues to join the *Intelligent Hydrodynamics* sessions.

Key Dates	Abstract Submission	Manuscript for Review	Final Manuscript due
	October 20, 2022	January 20, 2023	March 28, 2023

Submit abstract online <https://www.isopec.org/index.php/online-submission/>

General topic: **Hydrodynamics; Artificial Intelligence and Machine Learning**; Specific Topics

Symposium Organizing Committee

Prof. Dixia Fan, Westlake Univ., China

fandixia@westlake.edu.cn

Prof. M S Triantafyllou, MIT, USA

mistetri@mit.edu

Prof. Jiasong Wang, Shanghai Jiao Tong Univ., China

jswang@sjtu.edu.cn

Dr. Kai Zhang, HIT (Shenzhen), China

zhangkai2021@hit.edu.cn

Prof. Jin S. Chung, ISOPE, USA

jschung@isopec.org

Dr. Giovanni Iacobello, Univ. Surrey, UK

g.iacobello@surrey.ac.uk

Dr. Juan Li, King's College London, UK

juan.li@kcl.ac.uk

Dr. Qiang Zhong, Univ. Virginia, USA

qz4te@virginia.edu

Dr. Sicheng He, Univ. Michigan, Ann Arbor, USA

hshsc@umich.edu