CORE
OCEAN AND RESOURCES ENGINEERING
IN THE SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY AT THE UNIVERSITY OF HAWAI'I AT MĀNOA

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GPU-based mesh-less CFD modeling of free surface flows and wave-structure interaction
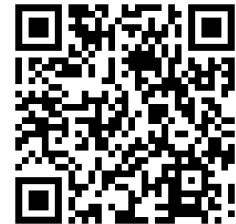
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Wednesday, April 24, 2024 at 3:30 pm - 4:30 pm

**In person: BIL 150
On zoom: Meeting ID: 950 8185 8686
                Passcode: OREseminar**

This talk introduces emerging GPU-based, mesh-less computational fluid dynamics (CFD) models, particularly focusing on turbulent free surface flows and fluid-structure interactions. This modeling framework directly captures the complex dynamics of multi-body structures like Wave Energy Converters (WECs), along with their interactions with surrounding turbulent flows under various sea states. By adopting a mesh-less approach, we eliminate common challenges associated with mesh-based models, such as difficulties in surface tracking and mesh interpolation. Our GPU-based framework marks a significant advancement in the design process of WECs, offering substantially faster and more efficient computations than traditional CPU-based CFD models.

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