



MTU Wave is the collaborative wave tank lab at Michigan Technological University dedicated to advancing research and development in the field of floating offshore technologies. Our wave tank provides highly controlled conditions that enable us to validate complex mathematical models, execute wave energy converter control studies and test the performance of floating or underwater structures.

Description

- 10m x 3m x 1m concrete and glass basin
- 8 independently controlled paddles
- Regular and irregular wave generation
- 0.25 m maximum wave height
- 0.8 - 3.3 second period waves (0.3 - 1.3 Hz)
- Overhead access and walkway
- Custom wave field creation/analysis software
- Validated CFD model of the tank and the motion of any objects placed in it

Instrumentation

- Frictionless WEC equipped with voice coil actuation and non-contact position and force sensing for control studies
- Buoy dynamometer, Stroke: 200mm, Max Speed: 25.4 mm/s, Max. Force: 222N for hydrodynamic model validation
- 11-camera Qualisys motion capture system
- 16 resistive wave gauges
- dSPACE MicroLabBox
- Synchronized data collection
- Overhead-mounted, 6-axis Universal Robots UR10e for force or position manipulation of objects in the wave tank

Contact



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