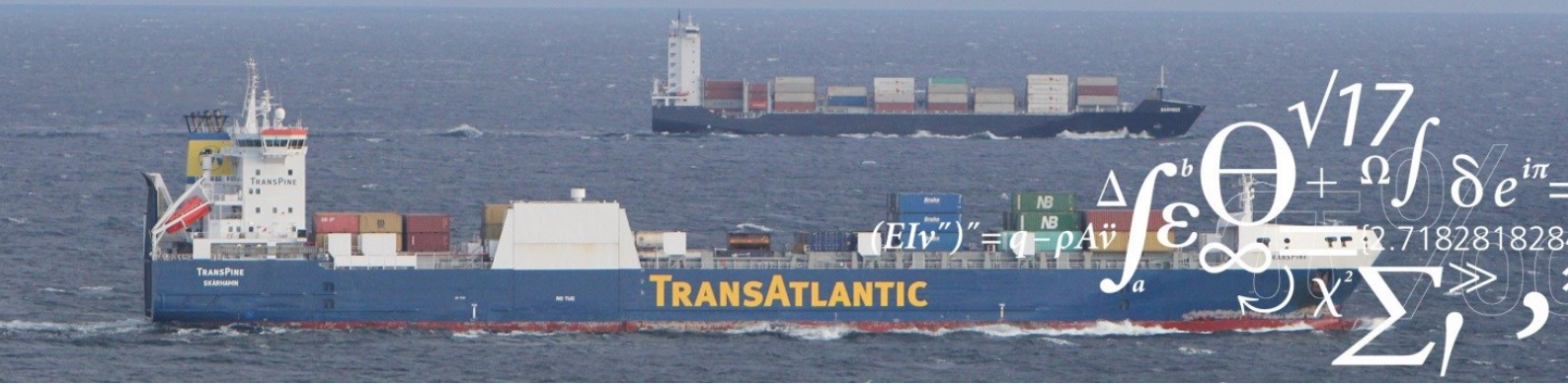


Maritime DTU
Center for Maritime Activities

Hydrodynamic response and wave measurement correction of a moored buoy

Type of project: MSc

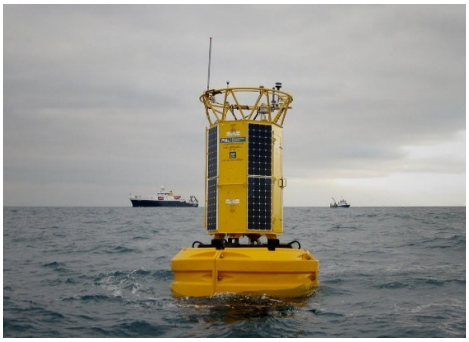
Project description:

Buoys are essential tools for collecting data that support many activities at sea. Industries such as offshore renewable energy, fisheries, and shipping depend on accurate information about weather and ocean conditions to ensure safe and efficient operations. Traditionally, waverider buoys have been considered the “gold standard” for measuring waves in nearshore and offshore environments.

MOBILIS SA commercializes large, multi-purpose moored buoys equipped with a wide range of sensors and communication systems. These platforms are typically much larger and heavier than conventional waverider buoys and use robust mooring systems designed for long-term deployment. As a result, their motion does not perfectly follow the sea surface elevation. Understanding and quantifying this difference is key to transforming such platforms into reliable wave-measuring systems.

Interested students are invited to get involved with MOBILIS SA, with the support of DTU’s and NTNU’s expertise, in the evaluation of wave analysis methods for this type of buoys. Through the analysis of real-life data from a large MOBILIS buoy deployed in the Marseille Bay, France, a suggested study could focus on characterizing and modelling the platform’s hydrodynamic response, followed by the development of a numerical correction approach to refine wave reconstruction from onboard sensors. Data provided by the French national coastal observatory (Candhis) can be referenced for comparison and validation.

Combining practical data handling with scientific investigation, this project is ideal for master’s students in ocean engineering, mechanical engineering, or related fields, with interests in marine data analytics, cybernetics, or naval architecture.



MOBILIS

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