Maritime DTU
Center for Maritime Activities

Numerical and Experimental Verification of Controlled Wave Energy Absorption using a single OWC Chamber

Type of project: *MSc or BSc*

Project description:
The project aims to optimise the energy extraction from waves using an oscillating water column (OWC). The OWC chamber enclose a volume of water and air, as the water in the chamber is oscillating with the waves, air is blown in and out through an air turbine. In model scale experiments the air turbine is modelled by an orifice. The project builds on a series of student projects carried out at DTU. This project aims to improve the energy extraction using different control strategies for the airflow through the turbine. The project will involve calculating the power capture using numerical models and comparing these with experimental results obtained using an existing model and prescribed measuring methodology. In the long term, the OWC chamber can be built as single unit or placed as an array along the sides of a ship-like structure facing the wave with its bow (photo below).

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