

Optimization of wave collector characteristics

OE Systems is a start-up company working in close collaboration with a global marine company as well as with industry leaders within electrical control and force systems to commercialize a unique wave energy converter (WEC). In the team you will find some of the most experienced global marine experts that will be able to provide feedback to you and give industry insights that is key to understand the real environment of a WEC. The team also contains strong academic experts for understanding and allowing you to develop during the execution of this master thesis.

Objectives and goals

The objective with this master thesis is to develop a high-fidelity numerical model of the wave collector. The model should then be used to elaborate on the effects of centre of gravity (COG), mass and dimensional changes of the wave collector and how they affect the energy absorption (details are available for students of interest). Limitations on the design scope to be considered in the master thesis are maximum allowed forces, travelled distance and orientation of the wave collector.

Methods and tools

The main work will be made in CFD, however analysis in more simplified models (e.g. Orcaflex, DeepC) may be considered for comparative purposes. There is a pre-study available as support that is verified by DNV marine experts that verified the methodology for how to analyse the surface collector in marine programs in a correct way.

Group size: 2 students.

Contact person (examiner and supervisor at Chalmers)

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