



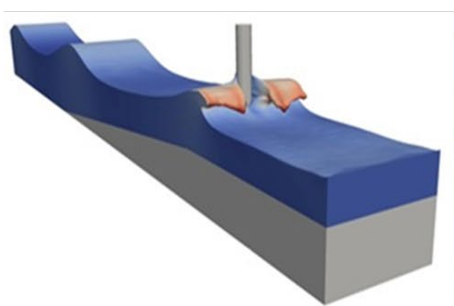
## MASTER THESIS PROPOSAL

# Numerical modelling of an Innovative Device for Wave Energy Conversion

### TOPIC

The conversion of wave energy into electricity is a technological challenge with a potentially significant contribution to the energy transition. The aim of the thesis is to contribute to the development of an innovative device for the conversion of wave energy. The work is part of a research and development project of the **A-MARE Joint Laboratory**, the **O<sup>2</sup>WC project**.

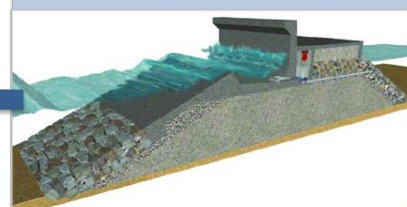
A **numerical wave flume**, capable of simulating the generation of wave motion and its interaction with the device, is expected to be used to investigate the effect of various geometric parameters on conversion efficiency. The work will primarily be based on numerical modelling using the open-source software OpenFOAM®.



**Oscillating Water Column**  
(air turbine)



**Overtopping**  
(low head water turbine)



## SKILLS ACQUIRED THROUGH THE THESIS WORK

The candidate will acquire skills related to:

- Principles of converting wave energy into electrical energy
- Computational fluid dynamics techniques applied to marine engineering
- Use of the open-source software package OpenFOAM®

### SUPERVISORS

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More info on the O<sup>2</sup>WC project

