



**Politecnico
di Torino**



Leveraging parametric resonance to enhance wave energy extraction.

Master thesis proposal at the Marine Offshore Renewable Energy Lab Department of
Mechanical and Aerospace Engineering Politecnico di Torino

👤 Recommended profile:

Mechatronics Aerospace Engineering Mechanical Engineering

💡 Topics involved:

Wave Energy

✉ Contact references:

MOREnergy Lab Supervisor - Giuseppe Giorgi (giuseppe.giorgi@polito.it)

Proposal description

A floating wave energy converter is a device that moves in response to incoming waves. Usually, only the linear resonance condition is taken into account for the power maximisation. By using a computationally efficient nonlinear Froude-Krylov force calculation approach (doi.org/10.5281/zenodo.4682671), nonlinear parametric resonance can be articulated and exploited to enlarge the energy absorption bandwidth.