Fluid mechanics, Coastal and Maritime engineering

The section

Main research areas

Fluid mechanics, hydrodynamics and its interaction with structures (also floating structures) and sea-beds.

Generic Competencies

Optical systems, PIV (particle image velocimetry), CFD (Computational Fluid dynamics).

Research structure

Three research themes:

- Fluid mechanics
- Hydraulic and Coastal engineering
- Maritime engineering

Employees

• Faculty 4 Professors, 7 Associate Professors	11
• Researchers, post docs, research ass.	6
• PhD students	20
• Guests (Private PhD-students, and researchers)	4

Fluid mechanics, Coastal and Maritime engineering

Fluid mechanics, Coastal and Maritime engineering

Research, Maritime Engineering

- Ship design for reduced environmental impact (‘Green Ships’)
- Development of improved methods for predicting the energy efficiency of ships
- Ship propulsion and propeller optimization
- Ship manoeuvring under reduced power
- Improved methods for predicting added wave resistance in heavy weather
- Numerical and experimental analysis of offshore renewable energy devices
- Hydrodynamic analysis of installation and maintenance vessels for offshore wind farms
- Extreme wave loading and hydro-elastic response of ships and offshore structures
- Reliability assessment of ships and offshore structures
- Estimation of the rolling motion of ships
- Hybrid control and dynamic positioning systems of marine vessels
- Estimation and prediction of sea states based on measured vessel responses
- Shipboard decision support systems for increased operational safety and improved energy efficiency