

Scheda Laboratori di Ricerca

<p>Denominazione del Laboratorio</p>	<p><i>Italiano</i></p> <p>Laboratorio di Idraulica - Idraulica Marittima - MaRELab (Marine Renewable Energy Laboratory)</p> <p><i>Inglese</i></p> <p>Hydraulic and Maritime Hydraulic Laboratory (HMHL) - MaRELab (Marine Renewable Energy Laboratory)</p>
<p>Gruppo di Ricerca di Riferimento</p>	<p><i>Italiano</i></p> <p>Energie Rinnovabili nell'Ingegneria https://www.ingegneria.unicampania.it/ricerca/gruppi-di-ricerca#renewable-energies-in-civil-engineering-energie-rinnovabili-nell-ingegneria-civile Civile Città smart e sicure: progettazione sostenibile e tecnologie innovative per la rigenerazione urbana https://www.ingegneria.unicampania.it/ricerca/gruppi-di-ricerca#smart-and-safe-cities-sustainable-design-and-innovative-technologies-for-urban-regeneration-citta-smart-e-sicure-progettazione-sostenibile-e-tecnologie-innovative-per-la-rigenerazione-urbana</p> <p><i>Inglese</i></p> <p>Renewable Energies in Civil Engineering https://www.ingegneria.unicampania.it/ricerca/gruppi-di-ricerca#renewable-energies-in-civil-engineering-energie-rinnovabili-nell-ingegneria-civile Smart and Safe Cities: sustainable design and innovative technologies for urban regeneration – https://www.ingegneria.unicampania.it/ricerca/gruppi-di-ricerca#smart-and-safe-cities-sustainable-design-and-innovative-technologies-for-urban-regeneration-citta-smart-e-sicure-progettazione-sostenibile-e-tecnologie-innovative-per-la-rigenerazione-urbana</p>
<p>Descrizione sintetica delle attrezzature, della strumentazione e delle attività di ricerca</p>	<p><i>Inglese</i></p> <p>The laboratory includes a wave tank located behind the G building with a net surface area of approximately 260m². The equipment consists of a concrete wave tank of approximately 12x16 m with a seabed varying between 70 cm (shallow water) and 200 cm (deep water), accompanied by a system of 30 paddels for the generation of wave motion and an overhead crane in metal carpentry for the positioning of the measurement sensors inside the tank. The tank is equipped with a hydraulic circuit with two recirculation pumps and a submersible pump for rapid emptying of the tank. Accompanying this equipment are numerous resistive sensors for measuring water levels, an Acoustic Doppler Current Meters (ADV) for measuring speed and an ultrasonic profiler for measuring vertical speed profiles. The instrumentation is controlled via two PCs placed inside an anodized aluminum cabinet overlooking the tank. A series of cameras, even submerged, allows the visualization of the tests on the model. The MaRELab (Marine Renewable Energy Laboratory) is located at the San Vincenzo pier in the Port of Naples. The area intended for experimental activities includes a portion of the breakwater on which there is a full-scale device for converting wave energy into electricity, a research hub called "weather building" and a large body of water of over 24,000 m², located in front of the breakwater. The body of water is equipped with various anchoring systems, a floating fence with radarable signaling buoys, satellite wave buoys, a cable duct with underwater fiber optic cables and for sea power (220-400 V).</p>