



## DIME

### MODELLING AND OBSERVING EXTREME SEA-STATE WAVE SWELL FOR MRE

During storms or hurricanes, sea state models may significantly over- or underestimate the height of waves. An error in excess of 3 m relating to a wave buoy moored in the Iroise Sea was observed during the winter of 2013-2014.

Such errors have a direct impact on extreme statistics (e.g. 100-year wave height) used for dimensioning MRE systems. In addition, certification standards for dimensioning do not always make reference to state-of-the-art knowledge of the sea state. Poor knowledge and understanding of the physical environment creates uncertainty over the safety coefficients of dimensioning, which in turn leads to uncertainty over investment costs (CAPEX) and thus over energy costs (LCOE).

The DiMe project therefore proposes to identify needs relating to extreme sea state knowledge for MRE dimensioning standards, in order to validate models for extreme sea-state conditions as far as the cable landfall zone and to develop methodologies for more reliable (land-based and satellite) observation of extreme waves and their swell.

The tools developed as part of the DiMe project will be tested at the Fromveur tidal turbine site, the cable landfall zone of Raz Blanchard, the Groix Island floating wind turbine site, a wave turbine site in Aquitaine (Bayonne, Anglet and Biarritz) and on the Island of Reunion.

## Partners

### Companies

Bureau Véritas, Nantes  
EDF R&D, Laboratoire National d'Hydraulique et Environnement (LNHE), Chatou  
Naval Group, Brest  
Ocean Data Lab, Brest  
Open Ocean, Brest  
SABELLA SAS, Quimper,  
Suez Eau France, Courbevoie

### Research centers

France Energies Marines, Plouzané (29) et Marseille [[Project Developer](#)]  
Cerema, Brest  
EC Marseille, Marseille  
ENPC, Champs-sur-Marne  
Ifremer, Brest  
Institut National de Recherche en Informatique et en Automatique (INRIA), EPI BIOCORE, Sophia Antipolis  
MERIC, Chili  
Météo France, Brest  
SHOM, Brest  
Tohoku University, Japon  
Université de la Réunion, Saint-Pierre

## Funders

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France Energies Marines

## Labelisation

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## Overall budget

1 664 K€