Marine energy and mining resources

CARAVELLE

PREDICTING WIND CONDITIONS FOR MRE BASED ON SATELLITE DATA

The aim of the CARAVELLE project is to provide industrial players in the marine wind turbine sector with wind-prediction information, including for extreme events, based on satellite and in-situ modelling and data.

The energy resource afforded by wind turbines in coastal and littoral zones is often poorly controlled due to local effects, which are difficult to capture using modelling. Turbine blade fatigue is closely associated with atmospheric turbulence and its spectral characteristics.

As with the majority of MRE systems, fixed and floating wind turbines must able to resist extreme conditions and so dimensioning for such extremes is critical.

This project will provide satellite observation analysis tools to improve quantifying of extreme winds in areas prone to cyclones.

The CARAVELLE project is aimed at all MRE technologies, including Ocean Thermal Energy generally deployed in areas prone to cyclones.

Partners

Companies

ABB, Le Havre
CLS, Brest
EDF EN, Paris
Naval Energies, Paris
OceanDataLab, Locmaria-Plouzané

Research centers

France Energies Marines / Ifremer, Brest [Project Developer]
CICESE, (Centro de Investigación Científica y de Educación Superior de Ensenada), Ensenada, Mexique
CNRS
IMT Atlantique Bretagne-Pays de la Loire, Brest
IPSL-LSCE, Institut Pierre Simon Laplace - Laboratoire des Sciences du Climat et de l'Environnement, Saint Quentin en Yvelines
LACy Laboratoire de l'Atmosphère et des Cyclones, Université de la Réunion, Saint-Denis
RSMAS, Rosenstiel School of Marine and Atmospheric Science, University of Miami, Floride, Etats-Unis

Other partner

Région Bretagne

Funders

Agence Nationale de la Recherche
France Energies Marines

Labelisation

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1 544 k €