Post-doc position

"Dune morphodynamics in the context of Marine Renewable Energies"

N/Ref: FEM-2019-245

Company Description

FRANCE ENERGIES MARINES (FEM), the national research institute dedicated to Offshore Renewable Energy (ORE), supports the nascent ORE industrial sector with the means and skills that increase competitiveness by mutualizing R&D costs, reducing risks and accelerating the acquisition of data and knowledge. FEM activities are founded on Research and Development projects based on a broad public-private partnership involving large groups, SMEs, regional authorities, advanced research and training institutions and competitiveness clusters, and with the support of the national *Investing for the Future* program. FEM collaborators are scientifically and technically involved in these projects thanks to their high level of scientific expertise. The headquarters of FEM are located in Plouzané (Brest area), France.

Job Description

A post-doctoral position has been opened within the DUNES project, which focuses on understanding highly dynamic submarine dune ecosystems. Future ORE projects may deploy structures and cables within zones of this specific environment, and for which the associated ecosystem and dynamics require a better understanding.

The successful candidate will work both at the Shom, under the supervision of Drs. Thierry Garlan and Olivier Blanpain and at France Energies Marines, under the supervision of Dr. Maëlle Nexer, geomorphologist from the Environmental Integration research program.

Both institutes are working together on the main objectives of studying short and medium-term dynamics, with the interplay of long-term controls, through field observations of dunes as habitats at the Dunkerque, France, site. Studies concern different dune formations (sandbanks, megarides, dunes) over different time durations within a two-year period (seasonality, storms, tide effects).

The post-doctoral candidate will:

- Update the state of the art of underwater dune (15%) morphological characteristics and dynamics;
- Review the different existing modelling approaches and propose one for the DUNES project area (40%) which includes relationships with marine organisms and ORE technology interactions;
- Provide an up-to-date version of the Shom Dune GIS (15%);
- Apply a new processing algorithm (Ogor 2018) to data acquired during the DUNES project (30%).

To address this program, the candidate will work within a multidisciplinary consortium with complementary expertise in sedimentology, hydrodynamics and ecology in the context of interactions between ORE systems and the marine environment, and in ORE devices & developments.

Required Qualifications, Skills and Experience

Essential:

- PhD degree in sedimentology or geomorphology,
- Knowledge of sediment transport,
- Knowledge of numerical modelling,
- Knowledge of GIS tools,
- Writing reports and publications in scientific journals (English required).

Desirable:

- Knowledge of ORE systems,
- Good communication skills in both French and English (oral, written).

Candidate Profile

The candidate should have:

- strict scientific rigor and critical analysis,
- initiative, scientific curiosity and multi-disciplinary spirit,
- taste for research and teamwork.

Practical Information

Starting date, location: **2nd of September 2019**, for a temporary position of **9 months** (French "CDD") The position is located at the France Energies Marines (20%) and Shom (80%) headquarters:

Shom
13 Rue de Chatellier
29200 BREST

France Energies Marines
Bâtiment Cap Océan
525, avenue Alexis de Rochon
29280 Plouzané

Final date for applications: June 15th, 2019

Please send your CV and cover letter to the following electronic addresses: contact@ite-fem.org

For any additional information, please contact: maelle.nexer@ite-fem.org and Thierry.garlan@shom.fr

In case of an expected secondment of the candidate by a member of France Energies Marines, the application should mention the agreement of the present employer.