



Post-doc or Research Assistant position

Experimental study of jets pressure impact

- Profile:** Experimental fluid mechanics, optical metrology.
- Location:** Laboratoire Ondes et Milieux Complexes (LOMC),
UMR 6294 CNRS, Le Havre Normandy University,
53, rue de Prony - BP 540 - 76058 Le Havre Cedex
- Duration:** 1 year.
- Funding:** ERDF - Normandie Council through the project "DIagnostic et Disponibilité des installations de production d'Energie électrique à partir des énergies MARines renouvelables" (**DIADEMAR**)
- Dates:** Deadline for application 1th of September 2019
Starting date at least 1st of October 2019
- Contact and information:** Gaële Perret, LOMC UMR6294 CNRS, Le Havre Normandy University
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- Application:** CV, Cover Letter, track records by e-mail to
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Post-doc description:

When considering survivability of immersed structures in coastal zones, extreme events are one of the main concerns. The modelling of such phenomena, such as violent breaking waves impact on structures, is a key issue for designer of marine renewable energy systems.

Currently, wave impacts on structures are taken into account through heuristics models, usually determined from small scale experimental tests. Local and intense effects are often underestimated due to multiple physical parameters at stake: free surface shape in the vicinity of the wall, compressibility

of the flow, fluid aeration (through bubbles or air pocket), unsteadiness of the flow, stiffness of the structures....

Peak pressure estimation, propagation and diffusion of pressure waves in such conditions are scientific key issues.

The objectives of the present study is to characterize the impact peak pressure of a water jet as a function of the fluid aeration. To do so, the problem is simplified by considering a water jet impact on a surface equipped with pressure sensors. The aeration of the jet will be varied and controlled. These experiments will be performed in LOMC facilities.

The candidate will first have to set-up and realize the experiments. Then the analysis and publication of the results will be performed. The pressure wave intensity and propagation in an aerated jet should be characterized.

Context :

This proposition follows initial discussions with Prof. Mathieu Mory (University of Pau). The candidate will be integrated in marine hydrodynamics group of LOMC (UMR 6294) at University of Le Havre Normandy. The position is financed by the project DIADEMAR dealing with the reliability of marine energy structures.