Postdoctoral position opening

Capillary waves emission by an oscillating tip

Advisor :   Audrey Steinberger

Institution : Laboratoire de Physique, ENS de Lyon, CNRS UMR 5672, Lyon, France
            http://www.ens-lyon.fr/PHYSIQUE

Funding :   Junior Post-doc contract (2000 € net monthly)
            1 year (2nd year extension possible)

Schedule :   Applications opening in January 2018

In this project, we want to study the emission of capillary waves by an oscillating micro- or nanocylinder partially dipped in a liquid, as shown in figure1. The aim is twofold :

– to evalutate the amount of emitted energy as a function of the oscillation frequency and amplitude, the liquid meniscus shape, and the contact line pinning condition over the solid probe. Here the focus is on investigating the coupling between the solid probe and the capillary waves.

– to measure the dispersion relation of the capillary waves, and investigate the transition toward a non-linear response as the excitation amplitude increases. Here the focus is on the capillary waves themselves.
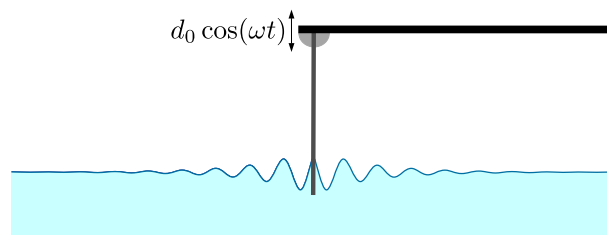

FIGURE 1 – Capillary waves emitted by an oscillating cylinder dipped in a liquid.

The measurements will be performed using a quadrature-phase interferometric technique on a dedicated setup. The liquids will be either pure or have their interface covered with an adsorbed layer.

The postdoctoral researcher is expected to work on the data acquisition program (written in Labview and Matlab), and to handle the experiments and subsequent data analysis. A background in instrumentation, wetting or interfacial rheology would be appreciated but is not mandatory.

Interested candidates should contact Audrey Steinberger (full contact details below), and send her a CV, a statement of research interests, and the contact information of 2 reseachers able to provide references for the applicant.

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