

Abstract Submitted  
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**Experiments on the interaction between hydrodynamic turbulence and surface waves**<sup>1</sup> TIMOTHEE JAMIN, MICHAEL BERHANU, ERIC FALCON, MSC, Universite Paris Diderot, CNRS, UMR 7057 Paris — Different regimes of interaction between hydrodynamic turbulence and a free surface are investigated in a meter scale basin. A homogeneous and isotropic turbulence is generated by an 8x8 array of jets pointing upwards at the bottom of the tank. The 64 jets are driven individually to reach a random spatiotemporal forcing pattern and produce an intense turbulence. Using fluid velocity measurements, we characterize the turbulence obtained with this setup, then we investigate free-surface deformations induced by hydrodynamic turbulence. In a second stage an electromechanical shaker will generate gravity-capillary waves at the free surface. We aim to study reduction or amplification of surface waves and then measure energy exchange between hydrodynamic turbulence and wave turbulence.

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Timothee Jamin  
MSC, Universite Paris Diderot, CNRS, UMR 7057 Paris

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