

Abstract Submitted
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Wave-vortex interaction CLAUDIO FALCON, Departamento de Fisica, Facultad de Ciencias Fisicas y Matematicas, Universidad de Chile, Casilla 487-3, Santiago, Chile, STEPHAN FAUVE, Laboratoire de Physique Statistique, Ecole Normale Supérieure, CNRS , 24, rue Lhomond, 75 005 Paris, France — We present an experimental study on the effect of a electromagnetically generated vortex flow on parametrically amplified waves at the surface of a fluid. The underlying vortex flow, generated by a periodic Lorentz force, creates spatio-temporal fluctuations that interact nonlinearly with the standing surface waves. We characterize the bifurcation diagram and measure the power spectrum density (PSD) of the local surface wave amplitude. We show that the parametric instability threshold increases with increasing intensity of the vortex flow.

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