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Experiments on linear waves propagating over a turbulent background PABLO GUTIERREZ, Univ de Chile, SEBASTIEN AUMAITRE, CEA Saclay, France, CLAUDIO FALCON, Univ de Chile — We are interested in what happens to a linear wave propagating on the surface of a turbulent flow. This problem is studied with two experimental procedures. First, we excite surface-resonant-modes by means of the periodic motion of a container with water. When we impose turbulent motion in the bulk of water, we observe a clear reduction in the resonance peaks. This represent a simple way to identify turbulent fluid motion as a source of dissipation for surface waves. The second procedure is to locally excite a wave at a given frequency, and to study its propagation along the container. Here again, when there is an underlying turbulent flow, we observe the enhancement of wave dissipation. Also, we observe a shift in the wavenumber through larger values, which can be understand as a random scattering of the wave on the turbulent structures.

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