

# Instabilités de faisceaux d'ondes internes : expériences et résultats théoriques récents

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Internal gravity waves play a primary role in geophysical fluids : they contribute significantly to mixing in the ocean and they redistribute energy and momentum in the middle atmosphere. Until recently, most studies were focused on plane-wave solutions. However, these solutions are not a satisfactory description of most geophysical manifestations of internal gravity waves, and it is now recognized that internal wave beams with a locally confined profile are ubiquitous in the geophysical context.

We will discuss the reason for the ubiquity of wave beams in stratified fluids, related to the fact that they are solutions of the nonlinear governing equations. We will focus more specifically on situations with a constant buoyancy frequency. Moreover, in light of recent experimental and analytical studies of internal gravity beams, it is timely to discuss the two main mechanisms of instability for those beams. i) The triadic resonant instability generating two secondary wave beams. ii) The streaming instability corresponding to the spontaneous generation of a mean flow.

## Références

T. Dauxois, S. Joubaud, P. Odier, A. Venaille, *Instabilities of Internal Gravity Wave Beams*, Annual Review of Fluid Mechanics (2017)