
Nonlinear internal waves: review of some recent and useful theoretical results -

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Abstract

I will review recent results of stratified fluids, illustrating the fascinating properties of internal gravity waves. I will in particular discuss three different physical mechanisms: internal wave reflection, mean flow generation and parametric subharmonic instabilities. I will mostly emphasize theoretical results but also discuss related experimental observations.

G. Bordes, A. Venaille, S. Joubaud, P. Odier, T. Dauxois, *Physics of Fluids* 24, 086602 (2012)

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Experimental observation of a strong mean flow induced by internal gravity waves.

B. Bourget, H. Scolan, T. Dauxois, M. Le Bars, P. Odier, S. Joubaud, *Journal of Fluid Mechanics* 759, 739 (2014) -

Finite-size effects in parametric subharmonic instability.

H.H. Karimi, T.R. Akylas, *Journal of Fluid Mechanics* 757, 381 (2014) -

Parametric subharmonic instability of internal waves: locally confined beams versus monochromatic wavetrains.

T. Kataoka, T.R. Akylas, *Journal of Fluid Mechanics* 769, 621 (2015) -

On three-dimensional internal gravity wave beams and induced large-scale mean flows.

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