Internal Wave Generation by Tide-Topography Interactions in the Presence of a Vertically Sheared Background Current

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Vertically sheared background currents alter the generation of internal waves by tide-topography interactions by introducing asymmetries and minimum phase speeds for horizontally propagating vertical modes. A linear theory for internal wave generation for arbitrary stratifications and background currents, restricted to lie above two-dimensional topography, has been developed. In this talk the results of fully nonlinear simulations of the internal wave generation process will be presented and compared with predictions of the linear theory. We have found that the theory gives good predictions for wide subcritical ridges. Rotational affects have not been considered.