Internal-Tide Scattering by 2D Topography: Experimental Study
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Experiments have been realized at the Coriolis Turntable in Grenoble (France), a cylindrical rotating tank of 13 m diameter. The velocity fields observed using PIV technique are analyzed in terms of modal decomposition. Knowing that 97% of the generated internal tide energy flux is associated to a mode-1 internal tide, we analyze its interaction with a 2D gaussian topography. Subcritical and supercritical bathymetry are considered according to the frequency of the incoming internal tide. Estimations of the amount of reflected energy by the topography, such as the scattering into higher modes of the transmitted wave field, are in good agreement with numerical predictions.

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Date submitted: 08 Aug 2009