

Abstract Submitted
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Bumps, witches and bouncing beams: lab investigations of internal waves THOMAS PEACOCK, PAULA ECHEVERRI, MIT, NEIL BALMFORTH, UBC, ALI TABAEI, MIT — There is a great, ongoing effort to better understand the processes surrounding internal wave generation, propagation and dissipation in the oceans. To contribute to this effort, we are in the process of establishing a state-of-the-art experimental facility. The facility, based around the digital schlieren method, is designed to investigate both linear and non-linear phenomena in a laboratory setting. We here report the latest experimental results concerning tidal conversion by typical topographic features, such as a Gaussian bump and a knife-edge. The quantitative results compare very well with theoretical predictions developed from the classic work of Bell and Hurley, and more recent analysis of subcritical topography by Balmforth et al. In addition, we present more details on recently published results concerning the nonlinear generation of second-harmonic wavebeams at reflecting boundaries.

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