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Energetics of internal boluses on a shelf break SUBHAS VENAYAGAMOORTHY[1], OLIVER FRINGER[2], Environmental Fluid Mechanics Lab, Stanford University — We present results of high-resolution two-dimensional numerical simulations showing the interaction of nonlinear internal waves with a shelf break. The interaction of the incoming wave field with a near-critical to supercritical topography causes the formation of upslope surging bores that get ejected onto the shelf as propagating internal boluses. We present the energy flux distribution across the shelf-break for a wide range of topographic slopes and Froude numbers and show that both the transmitted energy fluxes as well reflected energy fluxes are strong functions of both the Froude number and the ratio of the topographic slope to the internal wave beam angle.

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