

Abstract Submitted
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Simultaneous generation and scattering of internal tides by ocean floor topography¹ MANIKANDAN MATHUR, Department of Aerospace Engineering, IIT Madras, Chennai - 600036. — Internal waves play a significant role in the global energy budget of the ocean, with internal tides potentially contributing to the conversion of a large amount of mechanical energy into heat in the deep ocean. Several studies in the past decade have investigated internal tide generation and internal tide scattering by ocean floor topography, but by treating them as two separate, independent processes. In this talk, we use the recently developed Green function model (Mathur et al., *J. Geophys. Res. Oceans*, 119, 2165-2182, 2014), sans the WKB approximation, to quantify the extent to which internal tide generation (scattering) that results from barotropic (baroclinic) forcing on small- and large-scale topography in uniform and nonuniform stratifications is modified by the presence of a background baroclinic (barotropic) tide. Results on idealized topography, stratification and forcing will first be presented, followed by a discussion on the relevance of our studies in the real ocean scenario.

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