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Modal decomposition of polychromatic internal wave fields in arbitrary stratifications[1] MORRIS FLYNN, University of Alberta, ALEXIS KAMINSKI, Applied Physics Laboratory, University of Washington — Internal waves e.g. those produced by tidal sloshing over bathymetry play a crucial role in the energetics of the oceanic overturning circulation. Understanding their spatial and temporal structure, which depend on both the details of the forcing topography and the forcing frequency, is essential in predicting where mixing may occur, details of which remain poorly understood. Past work has largely focused on the case of a monochromatic wave-field; however, tides are composed of multiple frequency constituents. Here we present an approach by which the modal structure of a polychromatic internal wave-field may be computed from velocity data without any *a-priori* knowledge of the details of the forcing topography. We consider wave-fields in both uniform and vertically-varying stratification, and show using synthetic data that our approach is able to accurately reconstruct the vertical mode strengths. The sensitivity of our approach to noise and vertical resolution is also examined.

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