

Abstract Submitted
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Internal Waves Generated By A Horizontally Moving Source In A Thermocline - A WKB Approach LAURA BRANDT, CECILY KEPPEL, JAMES ROTTMAN, Science Applications International Corporation, DAVID BROUTMAN, Computational Physics Inc — A new, computationally efficient method is described for calculating the internal wavefield generated by a localized source moving horizontally within an ocean thermocline. The new method involves Fourier-space ray-tracing, instead of a more traditional Green's function approach with eigenfunction expansion. In addition to computational efficiency, the new method provides physical insight into how the wavefield is generated. The Fourier-space ray-tracing method reproduces all of the terms in the Green's function solution (not just the eigenfunctions) and provides a physical explanation of the significance of an eigenfunction derivative term in that solution. For validation, this new method is compared with and used to analyze and explain the various transverse and divergent wave modes observed in previously published experimental tank data.

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