

Abstract Submitted
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On the potential for transport due to internal tides in the coastal ocean¹ GONCALO TRIGO CABRITA GIL, OLIVER FRINGER, Environmental Fluid Mechanics Laboratory Dept. of Civil and Environmental Engineering Stanford University, Stanford, CA 94305 — Non-linear effects associated with internal waves lead to advection of fluid particles along with suspended mass such as sediment, nutrients, larvae, as well as contaminants. These factors contribute to the development of benthic communities, the geological shaping of the continental slope and, in some situations, play a role in the transport and fate of contaminants. We compute particle trajectories and resulting Stokes velocity profiles using a Navier-Stokes code with a Lagrangian particle tracking model, both are second-order accurate in time and in space. Results are compared to linear theory and a semi-nonlinear formulation using a uniform stratification and stratification typically found at Huntington Beach, CA where there is recurring bacteriological contamination.

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