Large internal waves in deep water: models, numerics and experiments[1] ROBERTO CAMASSA, RICHARD MCLAUGHLIN, University of North Carolina at Chapel Hill, PIERRE-YVES PASSAGGIA, University of Orleans, COLIN THOMSON, University of North Carolina at Chapel Hill — We investigate the propagation of large solitary internal waves in continuously salt-stratified water close to homogeneous two-layer configurations, when the lower, denser layer is much deeper than the one at the top. Experiments are performed in the UNC wave tank, with data collected via PIV and LIF, from both fixed locations and by a cart moving with the waves. Predictions from an optimized two-layer fully nonlinear model are compared with the experiments and direct numerical simulations of Euler equations in two dimensions.

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