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Mixing in Steady-State Gravity Currents JIM MCELWAINE, Durham University, CLAUDIA CENEDESE, Woods Hole Oceanographic Institution, JEFFREY HENINGER, U. Texas at Austin — Turbidity currents have been observed to propagate for very long distances, longer than one would expect based on the current knowledge of mixing and evolution of gravity currents. Recent DNS simulations suggest that when in steady state the gravity current presents a much more stable interface, potentially reducing the mixing with ambient waters and hence being able to survive and propagate for longer distances. We report experiments that investigate experimentally 'steady state' gravity currents as opposed to lock-release gravity currents, with particular emphasis on the interfacialinstability and assess whether the 'flavor'/characteristics of this shear instability and the induced turbulence are different in asteady state scenario as opposed to a more 'transient' scenario which has been investigated using lock-release gravity currents. We report on gravity current experiments in a flume that have reached a statistically steady state and compare the results to those obtained with a classic lock release set up, DNS and theoretical results.

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