

Abstract Submitted
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The Influence of Transport Phenomena on Turbulent Mixing rates XINFENG LIU, SUNY at Stony Brook, JAMES GLIMM COLLABORATION, XIAOLIN LI COLLABORATION, ERWIN GEORGE COLLABORATION — New simulations compare Rayleigh-Taylor mixing rates for ideal fluids and for real fluids with experimental values for surface tension and for mass diffusion. The simulated real fluid mixing rates agree with those measured experimentally within 15%. Comparison to theoretical predictions relating the mixing rate, the bubble width and the bubble height fluctuations based on bubble merger models shows similar agreement with experiment. The ideal fluid mixing rate is some 50% larger, providing an example of the sensitivity of the mixing rate to physical scale breaking interfacial phenomena; we also observe sensitivity to numerical scale breaking artifacts.

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