Abstract Submitted
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Numerical investigation on the effects of acceleration reversal times in Rayleigh-Taylor Instability with multiple reversals[1] ZACHARY FARLEY, DENIS ASLANGIL, ARINDAM BANERJEE, Lehigh University, ANDREW G.W. LAWRIE, University of Bristol — An implicit large eddy simulation (ILES) code, MOBILE, is used to explore the growth rate of the mixing layer width of the acceleration-driven Rayleigh-Taylor instability (RTI) under variable acceleration histories. The sets of computations performed consist of a series of accel-decel-accel (ADA) cases in addition to baseline constant acceleration and accel-decel (AD) cases. The ADA cases are a series of varied times for the second acceleration reversal (t_2) and show drastic differences in the growth rates. Upon the deceleration phase, the kinetic energy of the flow is shifted into internal wavelike patterns. These waves are evidenced by the examined differences in growth rate in the second acceleration phase for the set of ADA cases. Here, we investigate global parameters that include mixing width, growth rates and the anisotropy tensor for the kinetic energy to better understand the behavior of the growth during the re-acceleration period.

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