

Abstract Submitted
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Rayleigh-Taylor Instability with Variable Durations of Acceleration Removal¹ ARINDAM BANERJEE, Lehigh Univ, DENIS ASLANGIL, Los Alamos National Laboratory, ZACH FARLEY, Lehigh Univ, ANDREW G.W. LAWRIE, Univ of Bristol — In this study, we explore the effects of variable duration of acceleration removal on the Rayleigh Taylor Instability (RTI) by using implicit large-eddy simulations. For our test case, RTI undergoes a period of constant acceleration (A) followed by a period when the acceleration is removed (Z) followed by a period of second acceleration (A). We call this acceleration time-history as the AZA case. Acceleration removal leads to a rapid decay in kinetic energy within the RTI mixing layer, whereas the mixing state stays similar during the Z stage. The duration of the zero acceleration (Z) period is varied, and it did not influence the re-growth of RTI during the second acceleration stage. In this talk, we will discuss our findings and the similarities of RTI-AZA with the Richtmyer-Meshkov Instability (RMI). The mixing state evolution and the growth of the mixing layer were observed to be similar for both RMI and RTI during acceleration removal stage.

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