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On Buoyancy and Shear Mixing BETH PLACETTE, BHANESH AKULA, Texas A&M University, MALCOLM ANDREWS, Los Alamos National Laboratory, DEVESH RANJAN, Texas A&M University — Combined Rayleigh Taylor and Kelvin Helmholtz instabilities play a significant role in a number of phenomena, most importantly inertial confinement fusion. Should the relationship between initial conditions and mixing be determined, then, in principle, the level of mixing could be controlled through the setting of specific conditions. To investigate this proposition, a Kelvin Helmholtz Rayleigh Taylor experiment with a low Atwood number, buoyancy- and velocity-driven mixing width was investigated. The experiment was modeled using an implicit large eddy simulation code which uses a finite volume technique to solve the three dimensional incompressible Euler equations. The number of modes and the magnitude of the perturbations were set to investigate the rate of development as well as the maximum growth reached of the mixing width. Preliminary results show a promising overall agreement for the mixed region when the number of modes is increased.

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