An analysis of methods of determining the effective eddy viscosity of an Implicit LES for mixing simulations YE ZHOU, LLNL, BEN THORNBER, The University of Sydney — The Implicit large-eddy simulations (ILES) have been utilized as an effective approach for calculating many complex flows at high Reynolds number flows. Richtmyer–Meshkov (RM) instability induced flow can be viewed as a homogeneous decaying turbulence (HDT) after the passage of the shock. In this article, a critical evaluation of three methods for estimating the effective Reynolds number and the effective kinematic viscosity is undertaken utilizing high resolution ILES data. Effective Reynolds numbers based on the vorticity and kinetic energy decay rate, or the integral length and dissipation scale are found to be the most self-consistent when compared to the expected phenomenology and wind tunnel experiments.

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