Reynolds-Averaged Navier–Stokes Model Predictions of Self-Similar Richtmyer–Meshkov Instability-Induced Mixing[1] OLEG SCHILLING, Lawrence Livermore National Laboratory — A high-order, multicomponent, weighted essentially nonoscillatory implementation of a two-equation K-ϵ Reynolds-averaged Navier–Stokes model is used to simulate reshocked Richtmyer–Meshkov turbulent mixing at various Atwood numbers. The predicted mixing layer evolution is compared with analytical, late-time self-similar solutions of the transport equations. The terms in the transport equation budgets are compared in detail to self-similar profiles across the mixing layer. Additionally, the sensitivity of the turbulence model solutions to variations in the initial conditions and in the model coefficients is explored.

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