

Abstract Submitted
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Memory of Initial Conditions in Shocked and Re-shocked Heavy-Gas Curtains CHRISTOPHER TOMKINS, Los Alamos National Lab, B.J. BALAKUMAR, GREG ORLICZ, DEVESH RANJAN, KATHY PRESTRIDGE, LANL, LOS ALAMOS COLLABORATION — We experimentally investigate the memory of initial conditions in the concentration fields of Richtmyer-Meshkov-unstable flows. We consider shocked heavy-gas curtains in air for several initial conditions at $Ma = 1.2$. The concentration of the heavy gas is measured using planar laser-induced fluorescence, and spanwise power spectra of the concentration fields are computed from the PLIF data. The periodic initial conditions leave a clear imprint in the spectra as forcing modes, and the evolution of these modes is tracked over time. The effects of a stronger initial shock ($Ma = 1.5$), a second incident shock, and variations in the initial conditions on the persistence of the forcing modes in the spectra are investigated.

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