

Abstract Submitted  
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**Mach number effects in shock-driven instabilities** GREG ORLICZ, B.J. BALAKUMAR, SRIDHAR BALASUBRAMANIAN, CHRIS TOMKINS, KATHY PRESTRIDGE, LANL — Experiments are performed to study the effects of incident shock Mach number on the development of a varicose-perturbed, heavy-gas curtain (air-SF<sub>6</sub>-air). Incident shock strength is varied from Mach 1.2 to 2.0, and the dynamic evolution of the gas curtain is observed using Planar Laser-Induced Fluorescence (PLIF) and Particle Image Velocimetry (PIV). Previous work at the Los Alamos Gas Shock Tube (Orlicz et al. Phys. Fluids 2009), using the PLIF diagnostic to measure the temporal evolution of the density field, has shown that integral width growth rates for the curtain collapse using a scaling based upon the convection velocity of the curtain. However, the instantaneous mixing rate shows differences in mixing at scales smaller than the integral width, indicating that integral width alone is insufficient to describe the Mach effects on mixing.

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