

Abstract Submitted  
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**Experimental study of the two-mode Richtmyer-Meshkov instability.** VITALIY KRIVETS, JEFFREY JACOBS, University of Arizona — Experiments have been performed to study the Richtmyer-Meshkov instability of an Air/SF<sub>6</sub> interface initiated with a simple multi-mode initial perturbation. The experiments are conducted in a vertical shock tube and planar laser induced fluorescence is used to visualize the flow. The two gases flow from opposite ends of the shock tube driven section to form the interface. An initial perturbation in the form of the superposition of two two-dimensional normal modes is given to the interface by oscillating the tube in the horizontal direction at the combination of frequencies required to obtain the individual modes. Experiments with different relationships between the amplitudes and wavelengths of the sinusoidal modes will be presented. It is found that the amplitude of the multimode perturbation grows faster after interaction with the shock wave than its single-mode components.

Jeffrey Jacobs  
University of Arizona

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