

Abstract Submitted
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PIV measurements of the single-mode Richtmyer-Meshkov instability. ROGER AURE, JEFF JACOBS, University of Arizona — Experiments will be presented where a system of two gases of different densities ($A = 0.66$) is impulsively accelerated to produce Richtmyer-Meshkov (RM) instability. An interface is created by filling the driven section of a 9.8 meter long vertical shock tube with opposing gas flows of air and Sulfur Hexafluoride (SF_6). The interface forms in the top of the Plexiglas test section where the two gasses meet and exit through two slots. The gases are seeded with $0.3\mu\text{m}$ polystyrene Latex spheres. An initial 2-D perturbation in the form of a standing wave of sinusoidal shape is created by oscillating the driven section in the horizontal direction. The interface between the gases is impulsively accelerated by an $M = 1.2$ shockwave. One image per experiment is captured with a cooled CCD camera. The image is doubly exposed by a double-pulsed ND-YAG laser and is analyzed using autocorrelation PIV techniques. Results will be presented showing velocity and vorticity distribution in the RM flow.

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