

Abstract Submitted  
for the DFD06 Meeting of  
The American Physical Society

**High resolution simulations of the single-wavelength Richtmyer-Meshkov flow**<sup>1</sup> PRAVEEN RAMAPRABHU, CNLS, Los Alamos National Laboratory, GUY DIMONTE, Los Alamos National Laboratory — The single-mode Richtmyer-Meshkov (RM) instability was investigated in three dimensions, using the compressible FLASH code, with Adaptive Mesh Refinement with effective resolution of up to 256 zones/ $\lambda$ , where  $\lambda$  is the wavelength of perturbation. The massively parallel capability of this code permitted investigation of this flow in computationally difficult regimes: Mach numbers up to 15, small initial amplitudes to ensure linearity of perturbations, and fluids with starkly different compressibilities. Linear and nonlinear theories of RM were evaluated under these conditions, and our findings will be presented. Other effects such as dimensionality, and Atwood number dependence were also studied.

<sup>1</sup>The FLASH software used in this work was developed in part by the DOE-sponsored ASC/Alliance Center for Astrophysical Thermonuclear Flashes at the University of Chicago.

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Date submitted: 02 Aug 2006

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