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Characteristics of Richtmyer Meshkov Instability in a Spherical Geometry¹ ANTHONY NELSON, PRAVEEN RAMAPRABHU, University of North Carolina at Charlotte, UNCC TEAM — We describe recent numerical simulations of the single-mode Richtmyer-Meshkov (RM) instability in a spherical geometry. The simulations were performed using the astrophysical FLASH code in two-dimensions in spherical coordinates. Two kinds of RM problems were setup to exploit the effect of shock convergence on perturbation growth. The first set of simulations had low Atwood number interfaces with large perturbations, subject to a Mach 1.2 shock. This set was established to investigate the result of direct contact between the interface and the converging/strengthening shock wave. Secondly, we investigated high Atwood number interfaces with high wavenumber perturbations, subject to a Mach 6 shock. For these simulations, we studied the interaction between the contact discontinuity and a strong converging shock when in close proximity. We expect the single-mode results to inform multimode growth relevant to applications.

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