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Numerical analysis of high explosive driven Richtmyer-Meshkov instability JONATHAN D. REGELE, ALAN K. HARRISON, JUAN A. SAENZ, MARIANNE M. FRANCOIS, Los Alamos National Laboratory — The Richtmyer-Meshkov Instability (RMI) is a canonical problem that describes baroclinic fluid instability introduced by a shock or blast wave impacting a perturbed interface of two different density fluids. Most numerical studies of RMI use shock waves with constant driving pressure behind the shock to induce the instability. However, outside of experiments, little numerical work has been done to highlight the impact of the expansion (Taylor) wave, located just behind a detonation front, on the interface. In this work, a high explosive is used to initiate a blast wave and understand the impact of the expansion wave on the interface. – Approved for unlimited release: LA-UR-17-26775.

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