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Results from a thin layer Richtmyer-Meshkov Experiment at OMEGA TIFFANY DESJARDINS, CARLOS DI STEFANO, ELIZABETH MERRITT, KIRK FLIPPO, FORREST DOSS, JOHN KLINE, Los Alamos National Laboratory — The Richtmyer-Meshkov (RM) instability can degrade heating of the fuel in inertial confinement fusion (ICF) capsules where a multi-layer spherical capsule is ablatively driven. The RM hydrodynamic instability occurs when an impulsive force (or shock) impinges and amplifies imperfections at an interface with disparate densities. Any defects on the ablator or between layers in an ICF capsule will grow due to the RM instability and may lead to further degrading hydrodynamic instabilities. The linear instability can be driven into a non-linear regime and even become turbulent if it is subject to more shocks. The *Mshock* campaign is studying this evolution in a planar multi-interface, multi-shock geometry analogous to an ICF implosion. The campaign uses a beryllium shock tube with low density CH foams and a thin high density CHI layer to study the layer's growth rate and the amount of mix expected based on the interface initial conditions. A smooth, coherent mode and broadband mode on the CHI layer provide a broad comparison of mix conditions for simulations. Results from experiments at the OMEGA facility in a simple shock and re-shock configuration and comparisons with the BHR Reynold's stress model are presented.

Tiffany Desjardins
Los Alamos National Laboratory

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