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**Experimental Investigation of Richtmyer-Meshkov Instability on Inclined Interface** CHRIS MCDONALD, JACOB MCFARLAND, Texas A&M University, DAVID REILEY, University of North Texas, BRIAN REID, DEVESH RANJAN, Texas A&M University — Results are presented from our recent experiments studying shock wave interaction with an inclined interface between two different fluids performed in a new newly built Texas A&M variable inclination shock tube facility. The variable inclination capability of the shock tube allows for an inclined interface to be created with ease, without changing the Mach number (pressure gradient) or Atwood number (density gradient). The ease of creating the interface provides a clean and repeatable interface for studying the Richtmyer-Meshkov Instability problem. The results presented from our initial experiments are from a Mach 1.6 shock wave interaction with a nitrogen-infused-fog-over-carbon dioxide interface for an inclination angle of 60 degrees. Quantitative results gathered from these experiments such as the mixing width growth rate, and vorticity deposition will be discussed in detail. Numerical simulations of the experiments are performed using the ARES code (LLNL) and the time evolution of the interface width, measured empirically, is compared to the corresponding numerical predictions.

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