

Abstract Submitted  
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**PLIF Measurements and Interface Stretching in the Blast-Driven Instability**<sup>1</sup> BENJAMIN MUSCI, SAMUEL PETTER, GOKUL PATHIKONDA, DEVESH RANJAN, Georgia Institute of Technology — The presented work focuses on the preliminary implementation of Planar Laser Induced Fluorescence (PLIF) to study the Blast-Driven Instability (BDI) in cylindrical geometry at the Georgia Tech Shock Tube and Advanced Mixing Laboratory. By using detonators to generate blast waves, a gaseous interface is subject to the combined Richtmyer-Meshkov (RMI) and Rayleigh-Taylor Instabilities (RTI); the two instabilities comprising the BDI. Previous validation of the facility was completed using high speed Mie Scattering and demonstrated faithful reproduction of the phenomena of the BDI. Previously completed Mie Scattering measurements will be used in conjunction with PLIF to measure the degree of inter-facial stretching for bubble-spike pairs in this facility. These efforts will be put toward the implementation of simultaneous PLIF and PIV for full flow field measurements.

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