

Abstract Submitted  
for the DFD19 Meeting of  
The American Physical Society

**A Compression - Ramp Shock/Boundary-Layer Interaction Over a Compliant Panel at Mach 5**<sup>1</sup> MUSTAFA MUSTA, LEON VANSTONE, MARC EITNER, JAYANT SIROHI, NOEL CLEMENS, University of Texas at Austin — A compression ramp induced shock wave/boundary layer interaction over a rigid and compliant surface was studied in a Mach 5 flow using high-speed stereo digital image correlation (DIC) and high-speed pressure-sensitive paint (PSP). The compliant panel, made of polycarbonate, is 2 mm thick and gives a fundamental first three mode frequency of about 700, 949, and 1350 Hz. The compression ramp, located at the downstream end of the compliant panel, is the compression angle of 28-degree compression ramp with 1-inch fence distance. The DIC will give time-resolved measurements of the displacement of the compliant panel, and the PSP will give the surface pressure over the entire panel. The simultaneous high-speed pressure and displacement measurements will allow analyzing the structural response of the compliant panel, flow unsteadiness, and the shock-foot in frequency and the time domain and compare with the rigid panel case.

<sup>1</sup>This study is sponsored by Sandia National Laboratories

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Date submitted: 05 Aug 2019

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