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Schlieren Imaging of a Shock-Boundary Layer Interaction Over a Porous Plate[1] CASSANDRA JONES, GRIFFIN EAGAN, BRIAN THUROW, Auburn University — Schlieren imaging was performed to obtain qualitative measurements of a shock wave-boundary layer interaction (SBLI) generated by a 2D impinging shock over a porous surface. The experiments were conducted for the SBLI over a flat plate with and without a porous insert. The compression ramp was designed to have a turn angle of 11.5in Mach 2 flow to generate a 43impinging shock which interacts with the boundary layer on the tunnel floor. The experiment serves as an initial investigation into how the presence of a porous surface influences the interaction strength and boundary layer separation in a qualitative sense. Past works have primarily considered the effects of porous surfaces in the form of ordered holes, slots, and devices such as meso-flaps, but a limited number of experiments have considered randomly oriented porous media.

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