

Abstract Submitted  
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**DNS of a Hypersonic Shock Wave/Turbulent Boundary Layer Interaction**<sup>1</sup> STEPHAN PRIEBE, JUSTINE LI, PINO MARTIN, University of Maryland, College Park — The direct numerical simulation of a hypersonic shock wave/turbulent boundary layer interaction (STBLI) generated by a 33-degree compression ramp is presented. The fully-turbulent inflow boundary layer is at Mach 7.2, and the Reynolds number based on momentum thickness is  $Re_\theta = 3500$ . The evolution of the mean and fluctuating field through the interaction region is investigated. In the supersonic regime, STBLI flows are known to display low-frequency unsteadiness, typically at frequencies 1-2 orders of magnitude lower than the characteristic frequency of the incoming undisturbed boundary layer. Preliminary observations are made about the properties of the low-frequency unsteadiness in the present hypersonic interaction.

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