

Abstract Submitted
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LES Study of Shock Wave and Turbulent Boundary Layer Interaction¹ JUSTINE LI, STEPHAN PRIEBE, PINO MARTIN, University of Maryland, College Park — The large eddy simulation (LES) of a 24° compression ramp shock wave and turbulent boundary layer interaction (STBLI) is presented. This work builds on previous work on the direct numerical simulation (DNS) of STBLI with similar incoming boundary layer flow conditions (Priebe and Martín, JFM 2012). The fully-turbulent inflow boundary layer is at Mach 2.9 and the Reynolds number based on momentum thickness is $Re_\theta = 2900$. The LES data cover a sufficiently long time to statistically resolve the low-frequency aperiodic cycle characteristic of supersonic STBLI. We present the characterization of the dynamics in the downstream separated flow.

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