

Abstract Submitted
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Analysis of Low-Frequency Unsteadiness in Shockwave and Turbulent Boundary Layer Interaction¹ STEPHAN PRIEBE, M. PINO MARTIN, Princeton University — The direct numerical simulation (DNS) of a compression-ramp shockwave and turbulent boundary layer interaction is presented. The simulation covers significantly more periods of the characteristic low-frequency shock motion than a previous simulation, which has been validated against experiments.^{2,3} We perform a spectral analysis of the flowfield, investigate the behavior of the separation bubble and possible physical mechanisms driving the low-frequency unsteadiness.

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²Wu, M. & Martin, M. P., AIAAJ, vol.45, pp. 879-889, 2007

³Wu, M. & Martin, M. P., JFM, vol.594, pp. 71-83, 2008

Stephan Priebe
Princeton University

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