

Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

The Turbulence Structure of Compressible Boundary Layers using Pattern Recognition and Tracking Algorithms in DNS data¹ G.C. RICHDALE, M. RINGUETTE, M.P. MARTIN, Princeton University, D. SILVER, Rutgers University — We use a direct numerical simulation database (Martin, JFM 2006) of compressible turbulent boundary layers to develop tracking algorithms for the turbulence structures. We use the pattern recognition and tracking algorithm of Wang and Silver (IEEE Transactions on Visualization and Computer Graphics, 1997) and incorporate the criteria used by Ringuette et al. (AIAA 2006-3539) to identify and characterize turbulence structures individually and in packets. In turn, the evolution of small and large coherent turbulence structures in space and time is visually monitored and the effects of Mach number and local compressibility are studied.

¹Supported by NSF grant numbers 1506823 and 1596819.

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Date submitted: 03 Aug 2006

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