Abstract Submitted
for the DFD07 Meeting of
The American Physical Society

**The wall signature of hairpin packets in turbulent boundary layers**[1] CLARA O'FARRELL, STEPHAN PRIEBE, PINO MARTIN, Princeton University — We use a direct numerical simulation database (Martin, 2006;[2] Martin, 2004[3]) of turbulent boundary layers, statistical tools (Brown & Thomas, 1977[4]) and pattern recognition and tracking algorithms (Wang & Silver, 1997[5]; Richdale, 2007[6]) to identify hairpin packets and their wall signature. The visualization algorithms are validated against the statistical analyses. We investigate the variation of time scales and length scales associated with coherent structures and the role of hairpin packets on the generation of skin friction, wall-pressure loading and heat transfer.

[1]Funded by NSF Grant # CBET-0238390 and AFOSR Grant # FA9550-06-1-0323
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Date submitted: 04 Aug 2007 Electronic form version 1.4