

Abstract Submitted  
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**High-Fidelity PIV of a Naturally Grown High Reynolds Number Turbulent Boundary Layer** DRUMMOND BILES, CHRIS WHITE, JOSEPH KLEWICKI, Univ of New Hampshire — High-fidelity particle image velocimetry data acquired in the the Flow Physics Facility (FPF) at the University of New Hampshire is presented. Having a test section length of 72m, the FPF employs the “big and slow” approach to obtain well-resolved turbulent boundary layer measurements at high Reynolds number. We report on PIV measurements acquired in the streamwise—wall-normal plane at a downstream position 59m from the test-section inlet over the friction Reynolds number range  $7000 < Re_\tau < 15000$ . Local flow tracer seeding is employed through a wall-mounted slot fed by a large volume plenum located 13.4m upstream of the PIV measurement station. Both time-independent and time-dependent turbulent flow statistics are presented and compared to existing data.

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