Abstract Submitted
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Status Update of the Flow Physics Facility at the University of New Hampshire[1] JIM FORSYTHE, JOE KLEWICKI, CHRIS WHITE, MARTIN WOSNIK, University of New Hampshire — The Flow Physics Facility at UNH is a unique high Reynolds number boundary layer wind tunnel. The facility uses a long length test section (72 m long, with a 2.5m x 6m cross section) to obtain a Reynolds number of about 50,000 based on boundary layer thickness and friction velocity. Since the tunnel uses a large development length and low speed (15-30 m/s) to create the boundary layer, the small scales of turbulence remain large enough to be measured with currently available instrumentation, enabling resolution of the entire turbulent spectrum at real-world scale Reynolds numbers. Phase I of the project has been constructed, enabling a test section speed of 15 m/s using an open-circuit design. Phase II has undergone preliminary design, with a funding request submitted, and would add a closed circuit and raise the maximum speed to 30 m/s. An adjustable ceiling allows is used to maintain a zero pressure gradient as the boundary layer grows down the length of the tunnel. A description of the facility's attributes as well as preliminary measurements characterizing the test section flow will be presented.

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