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Synchronous measurements of the streamwise velocity in a high Reynolds number boundary layer BEVERLEY MCKEON, Imperial College London, MEREDITH METZGER, University of Utah — Streamwise velocity measurements in the high Reynolds number turbulent boundary layer over the salt playa of Utah's western desert were made using thirty-one synchronously sampled single hot wires spaced up to a wall-normal height of 5m, or inner normalized distance $y^+ = O(10^4)$. Data were acquired under conditions of near-neutral stability, as verified by the Monin- Obukhov length, and varying wall roughness. Mean and rms velocity profiles and energy spectra will be used to illuminate the boundary layer physics and structure, with particular attention paid to identification of momentum equation scaling regions and high Reynolds number features. The support of a Royal Society Dorothy Hodgkin Fellowship (BJM) and ONR (MM) is gratefully acknowledged.

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