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Enhanced Pedestal Pressure and Increased Pedestal Width in Quiescent H-mode Plasmas in DIII-D[1] K.H. BURRELL, X. CHEN, General Atomics — A rapid transition in the pedestal pressure height and width along with increased pedestal turbulence is seen in double null quiescent H mode (QH-mode) discharges in DIII D run without ELMs at low toroidal rotation [1]. The electron pedestal pressure and confinement increase ∼60%. Experiments in 2016 have investigated the wide-pedestal parameter space further, demonstrating β_N up to 2.3. Power scans run at essentially constant density have found no upper power limit for the wide-pedestal QH mode at NBI input powers up to 5.5 MW. Previous shots exhibiting the return of ELMs at powers as low as 4 MW also had a density which increased with input power. The combined data set indicates that the limit on wide-pedestal operation is a density limit qualitatively similar to that seen in standard QH-mode. Over a power range of 3.9 to 5.5 MW, energy confinement time is independent of input power; the ITER-98y2 confinement factor reaches 1.6 at the highest input power. Comparing with previous single null, standard QH-mode shots at net zero NBI torque [2], confinement is 25% better at the same density and β_N.

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