

Abstract Submitted  
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**The Effect of Input Torque Ramps on Density Fluctuations Generated in the QH-mode Edge on DIII-D**<sup>1</sup> CHRIS ROST, E.M. DAVIS, A. MARINONI, M.A. PORKOLAB, MIT, K.H. BURRELL, GA — Recent studies of Quiescent H-mode with varied input torque have exhibited two regimes of edge density turbulence, as observed with the Phase Contrast Imaging (PCI) density fluctuation diagnostic. The PCI is especially sensitive to turbulence in regions of large velocity shear, as seen in the  $E_r$  well in the H-mode edge. QH-modes were first discovered in discharges with large input torque from neutral beams. Such plasmas possess a deep  $E_r$  well inside the separatrix and have highly sheared ion-scale turbulence in the outer portion of the well propagating in the electron diamagnetic direction at 50% of the largest  $E \times B$  velocity. As input torque decreases, additional sheared turbulence appears which propagates at 2-3 $\times$  the largest  $E \times B$  velocity, coincident with discontinuous changes in the velocity shear in the  $E_r$  well and the characteristics of the Edge Harmonic Oscillation. Robust performance is observed to continue throughout these qualitative changes in the QH-mode edge parameters and density turbulence.

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