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Power scaling of energy confinement in the wide pedestal quiescent H-mode at DIII-D[1] S. HOUSHMANDYAR, The University of Texas at Austin, K. H. BURREL, General Atomics, M. R. HALFMOON, The University of Texas at Austin, B. A. GRIERSON, PPPL, D. R. HATCH, M. E. AUSTIN, The University of Texas at Austin — The recently discovered wide pedestal quiescent H-mode (WPQH) at DIII-D is characterized by stationary operation without ELMs, formation of a wider and higher pedestal than standard QH-mode, and pedestal broadband fluctuations. Unlike the conventional H-mode where energy confinement time (τ_E) decreases with increasing heating power, τ_E in WPQH is constant when neutral beam heating is varied from 3.7 to 5.5 MW. In these experiments β_N increased by 43% but the pedestal height remained constant. Since core profiles in H-mode are generally considered stiff and strongly dependent on the pedestal, it is important to understand energy transport in the pedestal of WPQH. Here, we will present TRANSP power balance analysis to investigate the distribution of power in ion and electron channels. Furthermore, we will present gyrokinetic GENE simulations to understand the underlying microturbulence mechanisms of the core and pedestal. Preliminary results from local linear simulations in the mid pedestal exhibit the presence of low-k, electromagnetic modes with ballooning parity, and real frequencies in the ion diamagnetic direction, consistent with kinetic ballooning modes (KBM). Further analysis of the mid and high-k turbulence as well as global linear simulations will be presented.

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