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Edge Modeling of DIII-D Steady-State Discharges,[*] A. Sontag, J.M. Canik, L.W. Owen, M. Murakami, J.M. Park, *ORNL* – A 25% drop in the electron pressure at normalized minor radius of 0.8 corresponding to a 20% drop in the total pressure has been observed when comparing steady-state ITER demonstration discharges on DIII-D performed in 2013 to those performed in 2008. This drop significantly degrades fusion gain in integrated modeling simulations of ITER that scale the experimental DIII-D pedestal profiles to use as a boundary condition. Several differences in these discharges are being examined to determine the cause of this drop in pedestal pressure. Disparities in plasma shape could affect peeling/ballooning stability, and moving the outer strike point closer to the divertor cryopump duct for better particle control leads to a change in fueling. The toroidal field direction was also reversed between the two cases, in order to achieve better off-axis neutral beam current drive in the 2013 discharges; this changes the ∇B drift direction away from the X-point and reverses the ExB drift direction. EPED modeling will be used to examine differences in the MHD stability that could affect the pedestal pressure, and SOLPS is used in interpretive mode to look at the effects of changing drift directions and particle fueling.

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