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Predictions of ITER Steady State Scenario Using Scaled Experimental Edge Profiles in DIII-D,* M. Murakami, J.M. Park, *ORNL*; J.E. Kinsey, L.L. Lao, T.C. Luce, T.H. Osborne, G.M. Staebler, H.E. St John, P.B. Snyder, *GA;* E.J. Doyle, *UCLA*; R.V. Budny, D. McCune, *PPPL* — The DIII-D ITER demonstration shots replicated leading features of the ITER steady state scenario, including noninductive fraction (f_{NI}) above 100%, $q_{95} \sim 5$, plasma shape, aspect ratio and I_p/aB. Integrated modeling with a theory-based (GLF23) model is used to extrapolate these results to the ITER steady state scenarios. The boundary conditions for GLF23 are set at $\rho = 0.8$ while the edge profiles at $0.8 \leq \rho \leq 1.0$ are scaled with the experimental local $\beta_N(\rho)$. The predicted values of f_{NI} and fusion gain (Q) using the ITER Day-1 heating and current drive capability are close, but still somewhat short (by ~10%) in achieving the $f_{NI} = 100\%$ and $Q = 5$ goal. Sensitivities of f_{NI}, Q, edge and core stability, and gyrokinetic stability to plasma current, density, and density peaking, etc. will be discussed. Possible heating and current drive upgrades will also be explored.

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