

Abstract Submitted
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ITER demonstration discharges in DIII-D with dominant electron heating¹ T.C. LUCE, G.L. JACKSON, J.R. FERRON, R.J. LA HAYE, P.A. POLITZER, General Atomics, E.J. DOYLE, U. California-Los Angeles, J.M. PARK, Oak Ridge National Laboratory — DIII-D has investigated experimentally the ITER baseline H-mode scenario with a series of scaled demonstration discharges using the ITER shape and matching key dimensionless fusion performance parameters such as normalized beta, confinement factor and collisionality [1]. This work was recently extended to discharges with dominant electron heating, as ITER will have. In DIII-D, six gyrotrons inject up to 3.5 MW of heating power, allowing access to these ITER baseline scenario discharges with only small additions of neutral beam power. For neutral beam (NB) heated discharges it was found that the current profile is critical in obtaining reproducible discharges without tearing modes [2] and we will discuss the parameter range for EC discharges. Plans to extend this investigation by further lowering the net NB torque will also be presented.

[1] E.J. Doyle, et al., Nucl. Fusion **50** (2010) 075005.

[2] F. Turco and T.C. Luce, Nucl. Fusion **50** (2010) 095010.

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