

Abstract Submitted  
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Sorting Category: 5.1.1.2 (Experimental)

**Plasma Rotation and Direct Electron Heating in DIII-D**<sup>1</sup> J.S. DEGRASSIE, K.H. BURRELL, C.M. GREENFIELD, C.C. PETTY, G.M. STAEBLER, Y.R. LIN-LIU, General Atomics, W.W. HEIDBRINK, University of California, Irvine, M.R. WADE, Oak Ridge National Laboratory — In a wide variety of neutral beam heated discharges on DIII-D it is observed that the addition of direct electron heating, either with electron cyclotron or fast wave (FW) power, results in a reduction of the core toroidal rotation speed and in most instances also a reduction in the ion temperature. At present, the best explanation for this result is that the confinement of toroidal momentum decreases with increasing electron to ion temperature ratio. Ion thermal confinement increases with increasing  $T_e/T_i$  and is consistent with anomalous transport due to turbulent ion temperature gradient modes.<sup>2</sup> No evidence of any direct rf induced torque has been observed. In particular, a FW experiment was done with minority absorption by fast  $^3\text{He}$  to try to induce a torque to increase the toroidal speed. However, only the typical reduction was measured. Results from these experiments will be described.

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<sup>2</sup>C.C. Petty *et al.*, submitted for publication Phys. Rev. Lett.

  

Prefer Oral Session  
Prefer Poster Session

J.S. deGrassie  
@fusion.gat.com  
General Atomics

Special instructions: DIII-D Poster Session 2, immediately following R Prater

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