

Abstract Submitted  
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Sorting Category: 5.1.1.2 (experimental)

**Effect of Electron Cyclotron Heating on Core Ion Parameters in DIII-D**<sup>1</sup> J.S. DEGRASSIE, D.R. BAKER, K.H. BURRELL, C.M. GREENFIELD, Y.R. LIN-LIU, T.C. LUCE, C.C. PETTY, R. PRATER, General Atomics, M.R. WADE, Oak Ridge National Laboratory, B.W. RICE, Lawrence Livermore National Laboratory — In beam heated discharges in DIII-D with moderate or good core ion confinement the application of second harmonic electron cyclotron heating (ECH) reduces the core toroidal velocity,  $U_\phi$ , and ion temperature,  $T_i$ , as measured by charge exchange recombination spectroscopy on ambient carbon, similar to that seen with Fast Wave rf power.<sup>2</sup> One hypothesis is that electron heating enhances turbulence and ion transport. By varying the deposition location of the ECH a variety of  $T_e$  profiles result. We will discuss the correlation, or lack of, between the  $T_e$  profile and the reduction in  $U_\phi$  and  $T_i$ , and evaluate the terms of the radial force balance equation relating velocity to gradients in pressure and potential. Additionally we will describe indications of modified particle transport with ECH as measured by changes in the carbon density profiles.

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<sup>2</sup>J.S. deGrassie *et al.*, Proc. 12th Top RF Conf., Savannah (1997) p. 93.

Prefer Oral Session  
 Prefer Poster Session

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Special instructions: DIII-D Poster Session II (divertor physics, disruptions, RF, & diagnostics), immediately following Prater

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