

Abstract Submitted  
for the DPP02 Meeting of  
The American Physical Society

Sorting Category: 5.6.2 (Experimental)

**Comparison of Profile Stiffness in L-mode and H-mode in DIII-D**<sup>1</sup> J.C. DEBOO, T.C. LUCE, C.C. PETTY, DIII-D National Fusion Facility, J. NELSON, MIT, J. PINO, Cal Tech. — Previous experiments<sup>2</sup> have shown that modulated ECH is an excellent tool to test the stiffness of the electron temperature profile by monitoring the temperature response to the modulated heat source in the ECH resonance region of the plasma. The entire profile can be probed by scanning the ECH resonance location shot by shot. Previous measurements in MHD quiescent, sawtooth free, L-mode discharges indicated the  $T_e$  profile was not stiff although measured values of  $R/L_{T_e}$  were at the marginality condition for ITG and ETG drift waves in the core. Recent experiments were carried out in sawtooth free, ELMy, H-mode discharges with modulation frequencies of 25, 50 and 100 Hz. Preliminary analysis of the phase lag in the local  $T_e$  response indicates the profile is not stiff. Comparison of measured temperature gradients with critical gradients from drift wave stability calculations will be discussed.

<sup>1</sup>Work supported by US DOE Contract De-AC03-99ER54463.

<sup>2</sup>J.C. DeBoo, et al., Proc. of 29th EPS Conf., Montreux, Switzerland (2002) (<http://crppwww.epfl.ch/eps2002>).

  

Prefer Oral Session  
Prefer Poster Session

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Special instructions: Poster 3, Edge/Divertor/Transport

Date submitted: July 19, 2002

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