

Abstract Submitted  
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**Electron Cyclotron Modification of Profiles in Quiescent Double Barrier (QDB) Discharges on DIII-D**<sup>1</sup> T.A. CASPER, C.J. LASNIER, J.M. MOLLER, LLNL, K.H. BURRELL, P. GOHIL, A.W. LEONARD, P.B. SNYDER, W.P. WEST, GA, E.J. DOYLE, UCLA, J. WEILAND, Chalmers U. — High performance QDB conditions form when an internal transport barrier is created with intense neutral-beam injection into quiescent H-mode plasmas. We are exploring a variety of techniques to improve QDB parameters. In experiments using ECH/ECCD we observed a strong dependence on the q-profile when EC-power is used inside the core transport barrier. While strong electron heating is observed, we also observe a drop in the other core parameters;  $T_i$ , rotation,  $n_e$  and impurities. These dynamically changing conditions provide a scan of core temperature profile ratio with  $0.3 < (T_e/T_i)_{axis} < 0.8$  observed. We are exploring the correlation and effects of observed density profile changes with respect to these time-dependent variations in the temperature ratio. Thermal and particle diffusivity calculations indicate a consistency between the rise in temperature ratio and an increase in transport corresponding to the changes in density.

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