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Current and Density Profile Control in Quiescent Double Barrier (QDB) Plasmas on DIII-D[1] E.J. DOYLE, K.H. BURRELL, T.A. CASPER, J.C. DEBOO, P. GOHIL, C.M. GREENFIELD, J.E. KINSEY, C.J. LASNIER, T.C. LUCE, M.A. MAKOWSKI, G.R. MCKEE, R.A. MOYER, C.C. PETTY, T.L. RHODES, M.R. WADE, G. WANG, W.P. WEST, L. ZENG, DIII-D TEAM, DIII-D National Fusion Facility — QDB experiments on DIII-D in 2002 concentrated on three main areas. (1) A demonstration of q profile control in QDB plasmas using ECCD. This experiment was designed used transport and current drive modeling codes, and was performed using up to 2.3 MW of EC power. Substantial modification of the q profile was obtained in the experiment, in qualitative agreement with modeling predictions, indicating that fully non-inductive QDB plasmas are feasible. (2) Density profile control to reduce profile peaking and high-Z impurity accumulation was tried using a variety of techniques, of which on-axis ECH/ECCD appears the most promising. (3) Characteristics of the QH-mode edge and edge harmonic oscillations were studied, analysis of which is ongoing.

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☐ Prefer Oral Session
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Special instructions: Poster 7, Edge/Divertor/Transport

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