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[**x**] Theory [ ] Experiment

Measurement and Modeling of Pedestal Fueling in H-mode Plasmas in DIII-D,* L.W. Owen, Oak Ridge National Laboratory, R.J. Groebner, M.A. Mahdavi, *GA*, M.E. Fenstermacher, M. Groth, G.D. Porter, *LLNL*, J.G. Watkins, *SNL*, G.R. Tynan, D.L. Rudakov, *UCSD*, G. Wang, *UCLA* – The effects of the neutral fueling profile on the development of the edge pedestal in H-mode plasmas is investigated in a series of experiments on the DIII-D tokamak. The acquisition of a very detailed set of diagnostic data for a range of densities and heating powers permits the use of data-constrained discharge modeling to study pedestal formation for a wide range of discharge conditions. Toroidally localized recycling sources are minimized with the use of a "window frame" technique. Data from Thomson scattering, CER, profile reflectometry, embedded Langmuir probes, tangentially viewing CID cameras, a midplane reciprocating probe and filterscope arrays are used to reconstruct the plasmas with the B2.5 and UEDGE fluid codes and the neutrals distributions with the DEGAS Monte Carlo code. The data show no evidence of significant main chamber recycling during ELM-free periods. With primarily lower divertor recycling preliminary results indicate that the width of the density pedestal is approximately the neutral penetration depth.

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