

Abstract Submitted
for the DPP01 Meeting of
The American Physical Society

Sorting Category: (Experimental)

Calculated X-Point Neutral Density and Plasma Distributions for Lower Single Null Discharges in DIII-D,*

L. Owen, R. Maingi, R. Colchin, *ORNL*, M. Fenstermacher, *LLNL*, T. Carlstrom, R. Groebner, *General Atomics* – Analyses of plasma diagnostic data from lower single null discharges in DIII-D yield 2-D neutral density distributions that are compared to measurements along a chord through the X-point. The discharges are simulated with the B2.5 plasma and DEGAS neutrals transport codes. The study is focused upon comparison of results for L-mode plasmas having the same X-point location and ion grad-B drift directions toward the X-point (normal B_t) and away from the X-point (reversed B_t). A density scan at fixed input power for normal B_t , and a power scan at fixed density for reversed B_t are reported. For both directions of B_t the core plasma particle confinement times are less than, but within 50% of, the corresponding energy confinement times. For approximately the same plasma conditions and input power, the calculated particle confinement, and neutral density and plasma/neutral interactions in the X-point region of the core, show only a weak dependence on B_t .

*Work supported by the U.S. DOE under Contracts DE-AC05-00OR22725, W-7405-ENG-48, and DE-AC03-99ER54463.

- Prefer Oral Session
 Prefer Poster Session

Date submitted:

Electronic form version 1.4