

Abstract Submitted
for the DPP97 Meeting of
The American Physical Society

Sorting Category: 5.1.1.2 (experimental)

Plasma Pressure and Flows Near the Divertor X-point¹ M.J. SCHAFFER, N.H. BROOKS, General Atomics, J.A. BOEDO, R.A. MOYER, University of California, San Diego, R.C. ISLER, Oak Ridge National Laboratory — Thomson scattering data from the DIII-D tokamak show unexpectedly high electron pressures in the X-point region relative to p_e upstream on the same magnetic surface. X-point overpressures occur on closed magnetic surfaces and on open scrape-off layer (SOL) surfaces, but not on private flux surfaces. Overpressures have been observed during both attached and partially detached divertor conditions and in both Ohmic and ELMing H-mode operation. Thus, the usual assumptions of uniform pressure on a closed surface and monotonic pressure on a SOL surface are invalid. A model is presented to explain the observations. The overpressures are predicted to drive plasma flow parallel to the magnetic field. New Mach probe and Doppler spectroscopic measurements of the flow are planned and will be presented.

¹Work supported by U.S. DOE Contracts DE-AC03-89ER51114, DE-AC05-96OR224648, and Grant DE-FG03-95ER54294.

Prefer Oral Session
 Prefer Poster Session

M.J. Schaffer
schaffer@gav.gat.com
General Atomics

Date submitted: June 24, 1997

Electronic form version 1.2