

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Evaluation of Particle Pinch and Diffusion Coefficients in the Edge Pedestal of DIII-D H-mode Discharges¹ W.M. STACEY, Georgia Tech, R.J. GROEBNER, General Atomics — Momentum balance requires that the radial particle flux satisfy a pinch-diffusion relationship. The pinch can be evaluated in terms of measurable quantities (rotation velocities, E_r , etc.) by the use of momentum and particle balance [1,2], the radial particle flux can be determined by momentum balance, and then the diffusion coefficient can be evaluated from the pinch diffusion relation using the measured density gradient. Applications to several DIII-D H-mode plasmas are presented.

- [1] W.M. Stacey, Contr. Plasma Phys. **48**, 94 (2008).
[2] W.M. Stacey and R.J. Groebner, Phys. Plasmas **15**, 012503 (2008).

¹Work supported in part by the US DOE under DE-FG02-00ER54538 and DE-FC02-04ER54698.

W.M. Stacey
Georgia Tech

Date submitted: 17 Jul 2009

Electronic form version 1.4