

Abstract Submitted
for the DPP02 Meeting of
The American Physical Society

Sorting Category: 5.6.2 (Experimental)

Studies of the effect of the ∇B drift direction on H-mode access in DIII-D¹ T.N. CARLSTROM, R.J. GROEBNER, A.W. LEONARD, General Atomics, G.R. MCKEE, U. Wisconsin, R.A. MOYER, UCSD, T.L. RHODES, UCLA, J.C. ROST, MIT — The direction of the ion ∇B drift relative to the X-point location has a dramatic effect on the H-mode power threshold in DIII-D. This effect has been studied over the past few years in experiments where the ion ∇B drift direction was changed and the plasma configuration was held constant, and where the configuration was changed from lower single null to upper single null and the ion ∇B drift direction was held fixed. During these experiments, measurements of the edge and divertor plasma were made at constant heating power in order to discover differences that may contribute to the physics of spontaneous H-mode transitions in one situation but not in the other. Midplane edge plasma properties are almost identical in both cases with the exception of the poloidal group velocity of \tilde{n}_e . The divertor and X-point plasmas show differences in T_e and n_e profiles as well as \tilde{n}_e and $\tilde{\phi}$. A review of these experimental results and a comparison to theories on the ∇B drift effect will be presented.

¹Work supported by US DOE Contracts DE-FG03-99ER54463, DE-FG03-96ER54373, DE-FG03-95ER54294, DE-FG03-01ER54615, and DE-FG02-94ER54235 APTE.

☐ Prefer Oral Session
☒ Prefer Poster Session

T.N. Carlstrom
carlstrom@fusion.gat.com
General Atomics

Special instructions: Poster 4, Edge/Divertor/Transport

Date submitted: July 19, 2002

Electronic form version 1.4