Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Modifications of the edge electric field in the Compact Toroidal Hybrid torsatron with the use of a biased limiter[1] M. CIANCIOSA, E. THOMAS, B.A. STEVENSON, G. HARTWELL, S. KNOWLTON, Physics Department, Auburn University — Sheared flows arising from spatially inhomogeneous, transverse electric fields are of interest in space, laboratory and fusion plasmas. In toroidal fusion plasmas, these flows are often associated with enhanced stability regimes. This presentation reports on recent experiments performed on the Compact Toroidal Hybrid (CTH) device (R = 0.75 m, a $\sim$ 0.2 m , B $\leq$ 0.7, $n_e \leq 10^{19} \ m^{-3}$) in which a biased limiter inserted into the edge of the plasma is used to modify the edge radial electric field. Probe measurements indicate an asymmetric plasma response depending upon the sign of the bias. Probe measurements are also compared with interferometer measurements, which confirm the asymmetric plasma response.

[1]Supported by US DOE Grant DE-FG02-00ER54476.

Gregory Hartwell
Auburn University

Date submitted: 17 Jul 2008 Electronic form version 1.4