

Abstract Submitted
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Characterization of edge biasing in the Compact Toroidal Hybrid stellarator¹ 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. These flows are source of free energy that can drive or suppress instabilities. In fusion plasmas the presence of edge localized sheared flows are associated with enhanced confinement regimes (H-mode). Using a biasing probe, the radial electric field of the Compact Toroidal Hybrid (CTH) stellarator ($R_0 = 0.75$ m, $a \sim 0.2$ m, $B_0 \leq 0.7$ T, $\bar{n}_e = 0.2 - 1.5 \times 10^{19}$ m⁻³) is modified. Simultaneous measurements of plasma parameters and potential fluctuations are presented for various biasing probe configurations. Changes to the plasma response in the presence of magnetic islands may be presented.

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