

Abstract Submitted  
for the DPP08 Meeting of  
The American Physical Society

**Current-driven instability studies on the Compact Toroidal Hybrid (CTH) torsatron**<sup>1</sup> S. KNOWLTON, G. HARTWELL, J. HANSON, M. CIANCIOSA, J. PETERSON, B.A. STEVENSON, Physics Department, Auburn University, G. CARSON, Physics Department, University of Southern Mississippi — Ohmic currents are driven in ECRH plasmas in CTH ( $R_0 = 0.75$  m,  $a = 0.2$  m,  $B = 0.64$  T,  $n_e \leq 10^{19}$  m<sup>-3</sup>) to explore the resistance of stellarator plasmas to major disruptions with varying levels of vacuum rotational transform. While complete disruptions have not yet been observed, instabilities associated with rational values of the net rotational transform are noted. Also, rapid current and density decreases are observed that are possibly associated with double-valued rotational transform values as the current profile evolves. Efforts are ongoing to interpret these current-driven equilibria with magnetic and SXR diagnostics coupled to the V3FIT 3-D equilibrium reconstruction code.

<sup>1</sup>Supported by US DOE Grant DE-FG02-00ER54610.

Gregory Hartwell  
Auburn University

Date submitted: 17 Jul 2008

Electronic form version 1.4