Abstract Submitted
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ECRH and Ohmic Plasmas in the Compact Toroidal Hybrid (CTH) Experiment[1] G.J. HARTWELL, S.F. KNOWLTON, R. KELLY, C. MONTGOMERY, J.T. PETERSON, B.A. STEVENSON, T. DART, J. SHEILDS, Physics Department, Auburn University — Plasma is generated in the low-aspect ratio CTH torsatron (R_O = 0.75 m, $R_O/a_p \leq 4$, B $\leq$ 0.7 T) by electron cyclotron heating at a frequency of 18 GHz. Reliable breakdown at the fundamental frequency is obtained when RF power is launched into a broad, resonant saddle region present on the inboard side of the magnetic axis. Discharges up to 1 second duration have been produced with input RF power $\leq$ 10 kW. Ohmic currents are induced in ECRH-formed plasmas by capacitor bank discharge into a dedicated OH transformer coil set. Present experiments have begun with low plasma currents of approximately 5 kA with an ohmic phase lasting 75 msec. These experiments are the first in the planned studies of equilibrium and stability of current-carrying stellarator discharges. Ongoing efforts aim at improving plasma operation and implementing SXR arrays and a full set of magnetic diagnostics.

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