

Abstract Submitted  
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**Soft X-Ray Diagnostics on the Compact Toroidal Hybrid Experiment**<sup>1</sup> G.J. HARTWELL, J. ECKBERG, J.D. HANSON, S.F. KNOWLTON, Auburn University, K. KAMDIN, University of Chicago — Soft X-Ray (SXR) Diagnostics are used on the Compact Toroidal Hybrid (CTH) torsatron experiment ( $R = 0.75$  m,  $a \sim 0.2$  m,  $B \leq 0.7$  T,  $n_e \leq 10^{19}$  m<sup>-3</sup>,  $T_e \leq 250$  eV) for tomographic reconstruction of the emissivity profile, electron temperature measurement, and as input to a 3D reconstruction code. SXR tomography is performed with three cameras with up to 60 chords viewing a poloidal cross-section. Each camera consists of a 20-channel AXUV-20EL photo-diode array filtered with 500nm Al foil. Electron temperatures are being measured with an Amptek X123-SDD spectrometer. The spectrometer views the Bremsstrahlung emission along a single chord through the plasma in the energy range from 1-10 keV. Signals from the 60 channel tomographic camera system and signals from similar cameras located at other toroidal locations are being incorporated into the V3FIT reconstruction code[1]. [1]. J. D Hanson et. al., Nucl. Fusion **49**, 075031 (2009)

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