X-Ray Observations and Electron Temperature Measurement by Soft X-Ray Spectroscopy on the CTH Experiment\(^1\) J.L. HERFINDAL, G.J. HARTWELL, S.F. KNOWLTON, Auburn University — Hard x-ray (HXR) emission of runaway electrons with energies up to a few MeV are observed in the Compact Toroidal Hybrid (CTH) torsatron experiment \((R = 0.75m, a \sim 0.2m, B \leq 0.7 \, T, n_e \leq 10^{19} \, m^{-3}, I_p \leq 65 \, kA)\). HXRs were measured using a scintillator approximately 4\,m from the CTH device oriented tangentially to the plasma current. A sudden absence of HXRs before and during abruptions in the plasma current was observed. Electron temperature measurements are derived from soft x-ray measurements using an Amptek spectrometer. The soft x-ray spectrometer views the Bremsstrahlung emission along a single chord through the plasma in the energy range from 0.7–4\,keV. Central temperature measurements will be presented.

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