

Abstract Submitted  
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**HIT-SI3 Thomson Scattering Results**<sup>1</sup> CHRIS EVERSON, University of Washington — The Thomson scattering diagnostic on HIT-SI3 has been modified to enable measurements of electron temperature down to nearly 5 eV, and to allow for up to three simultaneous spatial measurements of  $T_e$  per discharge. The diagnostic uses a ruby laser (694.3 nm) to induce scattering and three 5-channel polychromators to resolve the Doppler-shifted spectrum. Presented are the first Thomson scattering measurements on the inductively driven HIT-SI3 spheromak, indicating plasma electron temperatures between 5-15 eV. Comparisons of different electron velocity distribution functions used in the fitting routine are shown and the plasma physics consequences are discussed. The possibility of using these results to probe electron drift velocity and density are also explored in the context of simulations and corroborating measurements from other diagnostics.

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