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Progress on FIR interferometry and Thomson Scattering measurements on HIT-SI3 CHRISTOPHER EVERSON, THOMAS JARBOE, KYLE MORGAN, Univ of Washington — Spatially resolved measurements of the electron temperature (T_e) and density (n_e) will be fundamental in assessing the degree to which HIT-SI3 demonstrates closed magnetic flux and energy confinement. Further, electron temperature measurements have not yet been made on an inductively-driven spheromak. Far infrared (FIR) interferometer and Thomson Scattering (TS) systems have been installed on the HIT-SI3 spheromak. The TS system currently implemented on HIT-SI3 was originally designed for other magnetic confinement experiments, and progress continues toward modifying and optimizing for HIT-SI3 plasmas. Initial results suggest that the electron temperature is of order 10 eV. Plans to modify the TS system to provide more sensitivity and accuracy at low temperatures are presented. The line-integrated n_e is measured on one chord by the FIR interferometer, with densities near $5x10^{19}$ m^{-3}. Four cylindrical volumes have been added to the HIT-SI3 apparatus to enhance passive pumping. It is hoped that this will allow for more control of the density during the 2 ms discharges. Density measurements from before and after the installation of the passive pumping volumes are presented for comparison.

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