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Multi-Point Thomson Scattering System Calibration and Measurements on HBT-EP[1] G.V. DONALD, J.P. LEVESQUE, C.C. STOAFER, M.E. MAUEL, Columbia University — A Thomson scattering (TS) system has been successfully installed and calibrated for diagnostics of HBT-EP. The TS system provides three spatial point measurements and has significantly improved upon the previous single point system. Analysis of Rayleigh Scattering was performed for an absolute density calibration of the TS system. Energy fluctuations in the output pulse from the Nd:YAG laser are individually recorded and accounted for using an integrating sphere and photodetector. T_e and n_e profiles have been investigated for varying wall configuration changes, including insertion of ferritic wall elements. We report our results, for the three spatial points, and measurements of the T_e and n_e evolution through typical HBT-EP discharges. The three fiber bundle system will be upgraded within the next grant period to allow measurement of ten spatial points. The ten point system will enhance our equilibrium reconstruction capability, improve stability analysis of the HBT-EP discharges, and allow for further understanding of the plasma characteristics during resistive wall mode (RWM) activity and active control experiments.

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George Donald
Columbia University

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