

Abstract Submitted  
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**X-Ray Measurements of the Levitated Dipole**<sup>1</sup> J.L. ELLSWORTH, J. KESNER, MIT PSFC, D.T. GARNIER, A.K. HANSEN, M.E. MAUEL, Columbia University, S. ZWEBEN, PPPL — Initial plasma experiments in the Levitated Dipole Experiment focus on producing hot electron, high beta plasmas using a supported dipole configuration. Plasmas were created using multifrequency ECRH, and we find that most of the plasma energy is stored in the fast electrons,  $T_e \sim 50$  keV. The energy spectrum of the x-ray emission below 740 keV is measured by a four channel pulse height analyzer using CZT detectors. Temporal resolution is achieved by collecting multiple spectra during each shot. The electron temperature is inferred from the x-ray energy. A hard x-ray camera<sup>2</sup> is used to view the spatial distribution of x-ray intensity in the plasma at a maximum of 60 fields per second. In addition, a single NaI detector (which views energies up to 3 MeV) measures the temporal fluctuations of x-ray emission from the plasma. X-ray measurements have shown the profile changes resulting from various ECRH configurations, and they are used with other diagnostics to determine plasma profiles and parameters.

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<sup>2</sup>S. von Goeler et. al. Rev. Sci. Instrum. **65**, 1621 (1994).

Jennifer Ellsworth  
MIT PSFC

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