

Abstract Submitted  
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**Experimental determination of the radial temperature profile in a non-neutral plasma** GRANT W. HART, BRYAN G. PETERSON, Brigham Young University — In 1992 Eggleston, et al.<sup>1</sup> reported on a technique for measuring the radial temperature profile in a pure electron plasma by partially dumping the plasma onto a charge collector. Several of their assumptions do not apply to our plasma, and so last year<sup>2</sup> we reported on a modified method which uses a form of equilibrium calculation to determine the temperature. We applied the method to the results of a simulation and found that it gave the correct temperature distribution, but we had no experimental data to apply the method to. We have now applied it to real data and found that the method was extremely sensitive to experimental noise. We have modified the method to make it less sensitive to noise and compared it to the standard ‘evaporation’ method. These experimental results will be presented.

<sup>1</sup>D.L.Eggleston, C.F. Driscoll, B.R. Beck, A.W. Hyatt and J.H. Malmberg, Phys. Fluids B **4**, 3432 (1992).

<sup>2</sup>Grant W. Hart and Bryan G. Peterson, Bull. Am. Phys. Soc. **49**, 320.

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