4A10 Relativistic Electron Beam Drift in a Quarter-Torus Sector.* T. R. Lockner, B. R. Kusse, and W. W. Destler, Laboratory of Plasma Studies, Cornell University. --The propagation of a relativistic electron beam in a 90° sector of a torus is studied under varying conditions of background pressure, beam energy, and initial position. The beam is guided down the sector by an applied toroidal magnetic field in the range 0-5 kilogauss. The predicted beam drifts due to gradient - B and $\overline{r} \times \overline{B}$ effects are calculated, and the results compared with the experimental data. The effect of wall currents on these drifts is also studied by varying the background pressure.

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