Abstract Submitted
for the GEC05 Meeting of
The American Physical Society

A bounded active magnetized plasma over a wide range of collisionality RAOUL FRANKLIN, The Open University — At the last GEC Sternberg gave a treatment of this problem in the collisionless limit, and with the magnetic field at a variable angle to the wall. This is extended to include the effect of collisions on the ion motion in the constant collision frequency for momentum model ν_i. The relevant parameters are ω_{ci}, the ion cyclotron frequency, the plasma half size L, the central Debye length λ_{D0}, and the ionization frequency Z. For $\nu_i = 0$ the results of Sternberg and Poggie are recovered and the dimensionless quantities used in the description of the results here are λ_{D0}/L, ω_{ci}/Z, ν_i/Z and the angle Ψ. The eigenvalue is ZL/c_s. As ν_i/ω_{ci} becomes greater than 1 the effect of the magnetic field is nullified, as is to be expected on physical grounds. Sternberg N and Poggie J (2004) IEEE Trans. Plasma Science **32**, 2217.

Raoul Franklin
The Open University

Date submitted: 08 Sep 2005 Electronic form version 1.4