Diagnostics for Electron Cloud Measurements in CESR  
Mentors: M. Palmer, G. Codner, L. Schachter

The phenomena of electron cloud growth places serious limitations on the operating parameters of the positron damping ring of the International Linear Collider (ILC). We are presently studying this effect using the Cornell Electron-positron Storage Ring (CESR). One tool to study the growth of the electron cloud in a vacuum chamber is the “retarded field analyzer” (RFA) which allows characterization of the local cloud density. Late in spring 2007, a set of RFAs will be installed in the CESR ring. The scope of this project will be to help commission the RFAs and to carry out studies to characterize the electron cloud growth in one section of the CESR ring. These studies are in preparation for further electron cloud studies as part of the CesrTA (damping ring test accelerator) R&D program.