E99-117

Experimental Setup

- Polarized electron beam
  - Beam polarimetry: Mott/Moller/Compton, 82%, $\frac{\Delta P_b}{P_b} \sim 3\%$;
  - Beam energy: eP/ARC, 5.734 GeV, $\frac{\Delta E}{E} \sim 10^{-4}$
  - Beam charge asymmetry feedback, < 200 ppm;
- Polarized ^3He target
  - Optical pumping of Rb, then spin-exchange by Rb-^{3}He collisions;
  - Longitudinal and transverse;
  - Polarimetry: NMR/EPR (+ elastic scattering), $\frac{\Delta P_t}{P_t} < 4\%$;
  - Average polarization: $\sim 40\%$;
- Beam and target polarization reversal
- Nearly identical High Resolution Spectrometers (HRS) in symmetric positions
  - Two VDCs for tracking;
  - Sets of scintillators for triggering on charged particles;
  - Gas cherenkov detector for pion rejection;
  - Two layers of lead glass counters for additional PID;
  - Pion rejection efficiency better than 10^{-4}