

## E00-007 / E00-107 Run Plan: 3.054 GeV

Setup:

- *Set spectrometers*: Set left arm to  $p_0 = +2.241$  GeV/c,  $\theta_0 = 29.557^\circ$ , open collimator. Set right arm to  $p_0 = -1.58$  GeV/c,  $\theta_0 \approx 57^\circ$ .
- *Cosmics*: Take cosmic data to check detectors while waiting for beam.

Checkout:

- 1. *FPP straight throughs*: raster on,  $\approx 1$  M events. Time:  $\approx 4$  hours. This can be done with LD<sub>2</sub> or <sup>12</sup>C<sub>optics</sub>, in unstable beam conditions.
- 2. *Analyzer access*: close carbon doors, enter left arm to setup CH<sub>2</sub> analyzer. Call X Jiang or R Gilman. Do any convenient time before # 8. Time:  $\approx 1$  hour.
- 3. *Luminosity / target boiling check*: Goal: basic test of target functionality. Stable beam needed for this and succeeding tests. Call David Armstrong / Kent Paschke / Riad Suleiman for luminosity check. Call Arun Saha for BCM calibration. Vary beam from 5 - max current (35  $\mu$ A?) in  $\approx 10$   $\mu$ A steps. Raster on. Put beam on <sup>12</sup>C, LH<sub>2</sub>, and LD<sub>2</sub> targets. Sharp transitions needed for BCMs, can be done with <sup>12</sup>C. Time: 1 hour.
- 4. *Bullseye scan*: Goal: BPM / HARP / SPOT cross calibration, and check of FB BPM readout. Call A Saha and B Reitz. Raster off,  $I \approx 2 - 3$   $\mu$ A. BeO target. CODA configuration: WITHROC14. Check apparent position of beam on BeO, spot, EPICS BCM screen, Do HARP scan with CODA run, 5 k events, for beam nominally centered and offset to center/corner edges of raster (8 positions, 1 mm offset.) Turn raster on and take 20 k events. Save results to HALOG. Time: 1 hour.
- 5. *Moeller polarization*: Call Eugene Chudakov. During this we should take a run with  $Q_{asymmetry}$  intentionally set large, and check that the HAPPEX, Moeller and spectrometer DAQs measure the same. Time 2 hours.
- 6. *Compton polarization*: Call Sirish Nanda, when Moeller in progress. Time: none, parasitic.
- 7. *Optics check*: raster off, multi <sup>12</sup>C foil target,  $\approx 50$   $\mu$ A. Time: 15 min.
- 8. *Analyzing power calibration*: Proton singles in left arm. LH<sub>2</sub> target. Time:  $\approx 12$  hours. (We will probably want more data later.)
- 9. *Angle reconstruction check*: During analyzer power calibration, have right arm set to  $\theta_R = 45.022^\circ$ ,  $p_R = 1.5628$  GeV/c, sieve slit collimator; T5's will provide an optics check. Time: none, parasitic.

## Data

- *Setup for  $\gamma d$  data:* Keep left arm momentum at  $p_0 = 2.241$  GeV/c, set  $\theta_0 = 48.265^\circ$ . Time: 15 min.
- *$\gamma d$  data:* Target: LD<sub>2</sub> *with radiator*. Default beam condition: FFB on, absolute mode, energy and position.  $I \approx 50 \mu\text{A}$  (35 at start?).  $2 \times 2$  mm raster on. OTRs may be left in for parasitic checkout, but shift crews should ignore them. Beam through Compton chicane, Compton measuring polarization parasitically. Keep / halog striptool of left arm magnets to check stability. Start and stop runs every hour. Some radiator out and LH<sub>2</sub> running will be done in same conditions, as per directions of run coordinator. Time: 10 days (at  $50 \mu\text{A}$ ).