Run plan for experiment 05038

Beam tuning - all these steps need to have the HiRA monitor enabled
• Check focusing on target viewer with pilot beam
• Center beam on viewer even if not at non-steering position (should be 7 mm to the North)
• Set A1900 on \(^9\)C beam
• Remove target viewer - no target
• Check \(^9\)C transmission from XFP to S800 FP and purity (need to first turn on S800 FP detectors)
• If possible, look at \(^9\)C beam on target viewer with XFP and Object scintillators in as well as tracking CRDC detectors

Setup and calibrations
• Check timing of FP scintillators as well as XFP and Object scintillators
• Debug tracking CRDC detectors
• Calibrate them using individual masks
• Take incoming beam composition calibration run
• Insert target mask and run target position calibration
• Insert Be target and set spectrograph on \(^8\)B
• Calibrate FP CRDC detectors with their individual masks
• Look for coincidences between S800 and HiRA and set coincidence window
• Check rate calibration of scintillators using A1900 Faraday bar

Run
• Depending on dead time, set trigger on both S800 singles downscaled and coincidences
• Rate in tracking CRDC detectors should not exceed 200k
• Run until statistics are satisfactory (should be around 12 hours)
• Lower beam intensity, set S800 back on unreacted \(^9\)C beam and run incoming beam intensity normalization
• Lower S800 magnetic rigidity by 3% - run 12 hours on low momentum tail
• Lower beam intensity, set S800 back on unreacted \(^9\)C beam and run incoming beam intensity normalization
• Raise S800 magnetic rigidity by 5% - run 12 hours on high momentum tail
• Lower beam intensity, set S800 back on unreacted \(^9\)C beam and run incoming beam intensity normalization
• Periodically perform tracking CRDC detector calibration by inserting their respective masks (every 4 hour or so)
On-line analysis
- Identify $^8$B in S800 FP
- Check CRDC efficiencies
- Verify coverage of $^8$B parallel momentum distribution
- Check transverse acceptance of S800 in both planes (ata vs bta) - this requires FP CRDC detector calibrations and inverse map
- Identify high energy protons in HiRA
- Assess number of coincidences $^8$B in FP - high energy proton in HiRA
- Gate $^8$B parallel momentum distribution on HiRA protons and NOT
- Estimate cross sections for stripping and diffraction

To do list (as of 1/18/06)
- Patch cables from HiRA to Data U-6 - Micha & Andrew
- Finish cooling installation on HiRA - Done - should ship fixed chiller soon - Betty
- Calibrate CsI with pulser - Vladimir & Daniela
- Reinstall $^{228}$Th sources in S800 FP - Done
- Check FP CRDC detectors with sources - Daniel & Alexandra
- Replace object scintillator with thin (5 mil = 127 µm) - Done
- Check object scintillator with dark current - Alexandra
- Vent lower dipoles, remove bellows between T4 and T5, remove gate valve between T5 and scattering chamber and ask Dave to install scope aligned on T5 - Daniel & Sean
- Remove feet + plate and weld together. Place back on frame - Daniel & Andrew
- Align HiRA table vertically on axis and horizontally 7 mm off axis to the North (left side when traveling with the beam) - Daniel
- Install bullet camera on scattering chamber (forward looking port) - Alexandre
- Check cameras at object and intermediate images - ask Mauricio
- Check HiRA rate monitoring (big brother on CsI) - Andrew
- Check SpecTcl - Daniel
- Isolate motor drives

Additional items
- Si bias - correct for voltage drop in bias resistor (10 MΩ)
- Run $^{207}$Bi and $^{228}$Th sources and compare to pulser ramps
- Check CsI with cosmic rays and source
- Post run calibrations (alpha source, pulser ramp)