Injector Commissioning & Optimization

QWeak Collaboration Meeting
February 1, 2010
Team

- Coordinator: Suleiman
- Members: Poelker, Grames, Hansknecht, King, Carlini, Paschke, Ramsay
- Plan:
  - Higher Voltage:
    I. Gun: Feb 2010, Test Cave
    II. CEBAF Beamline: May 2010
  - Electron Polarization Reversal: Commission at 100 kV during PREx, >100 kV in May 2010
  - New Helicity Board: Commission during PREx
    I. QWeak Pattern: May 2010
    II. QWeak Reversal Rate: May 2010 (need target & Lumi)
  - New IA (Charge Feedback): May 2010 (need analysis support)
Higher Voltage (May 2010)

I. Inverted Gun to > 100 kV

II. Injector to > 100 keV

III. Commission Wien Flipper at > 100 keV

IV. Injector Matching & Adiabatic Damping (Yves Roblin)

➢ 3 days are needed
Parity Quality Setup (May 2010)

I. Laser Alignment of Pockels Cell:
   o Initially, we will do our quick setup with a spinning WP + LP

II. Electron beam optimization (PQB):
   o RHW Angle

   ➢ 1 shift is needed

III. IA Charge Feedback

   ➢ 1 shift is needed
Helicity Board Settings (May 2010)

I. Helicity pattern

II. Helicity reversal rate: need target

III. Pockels Cell T_Settle

- 3 shifts are needed
Issues

- Need a student and a postdoc
- 32 MHz beam for background studies: work is underway