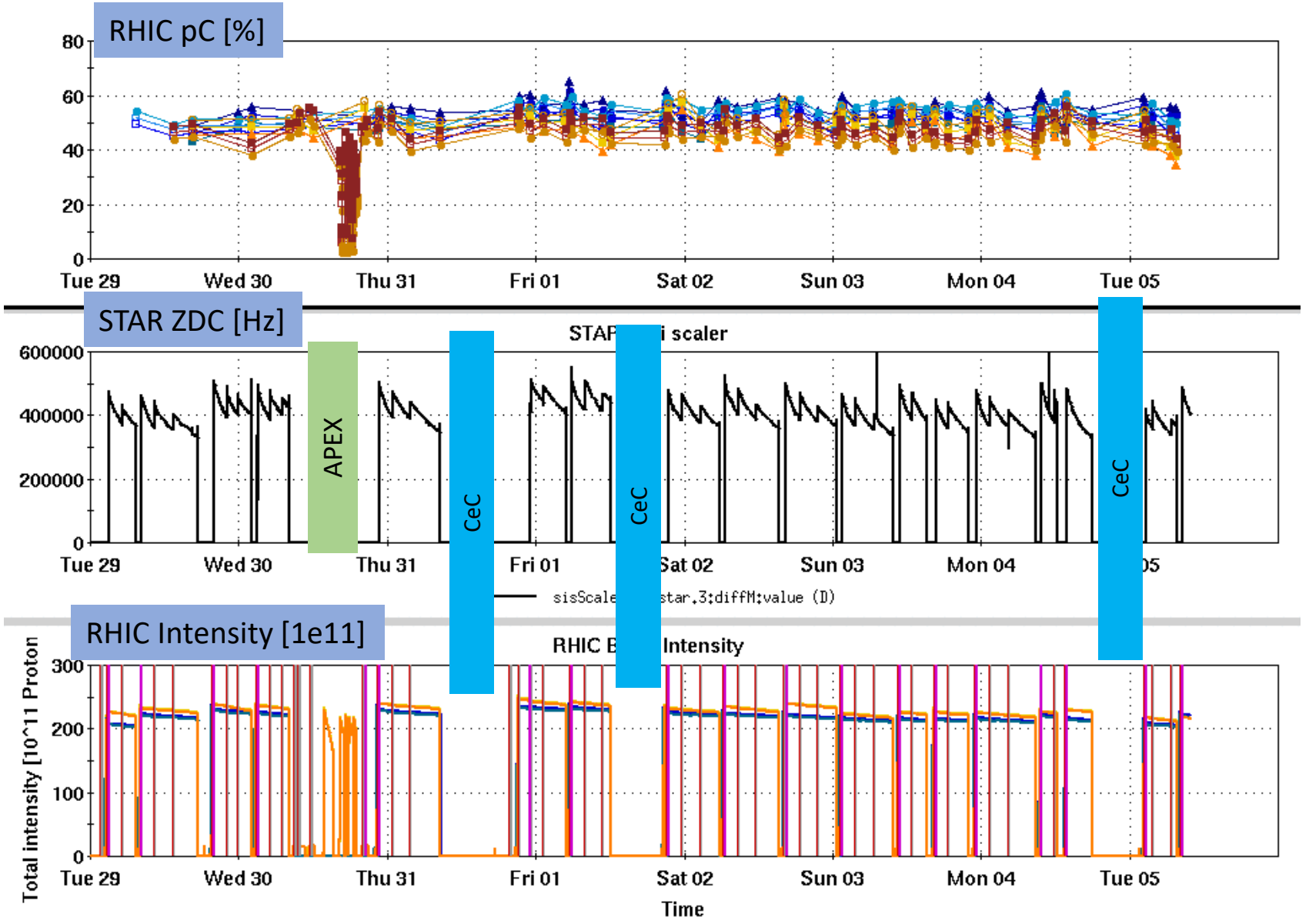
RHIC Run 22 Run Status

4/05/2022, V. Schoefer

- Good running conditions and high uptime for most of week
  - Significant interruptions to physics were all planned (APEX, CEC)

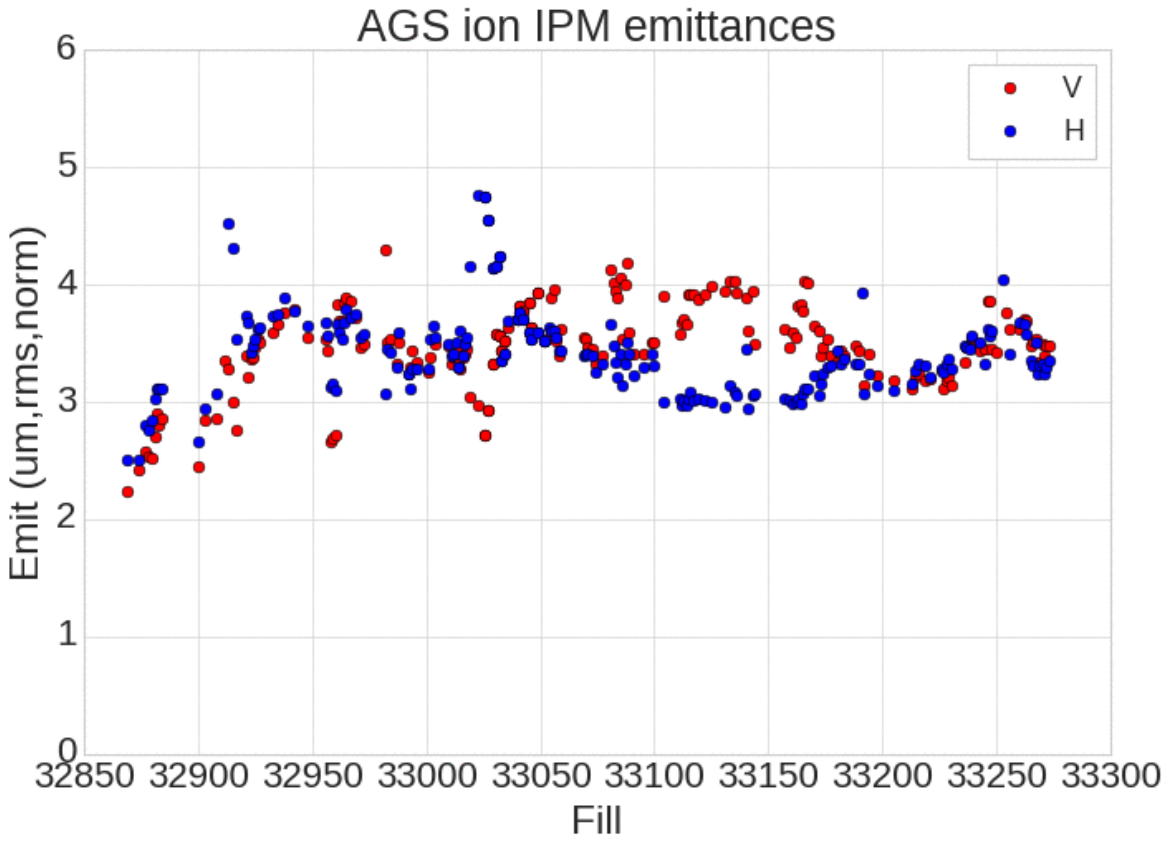
- Reduced AGS intensity for fills from 2.4 to 2.2x10^{11} to reflect updated cross section and lumi target

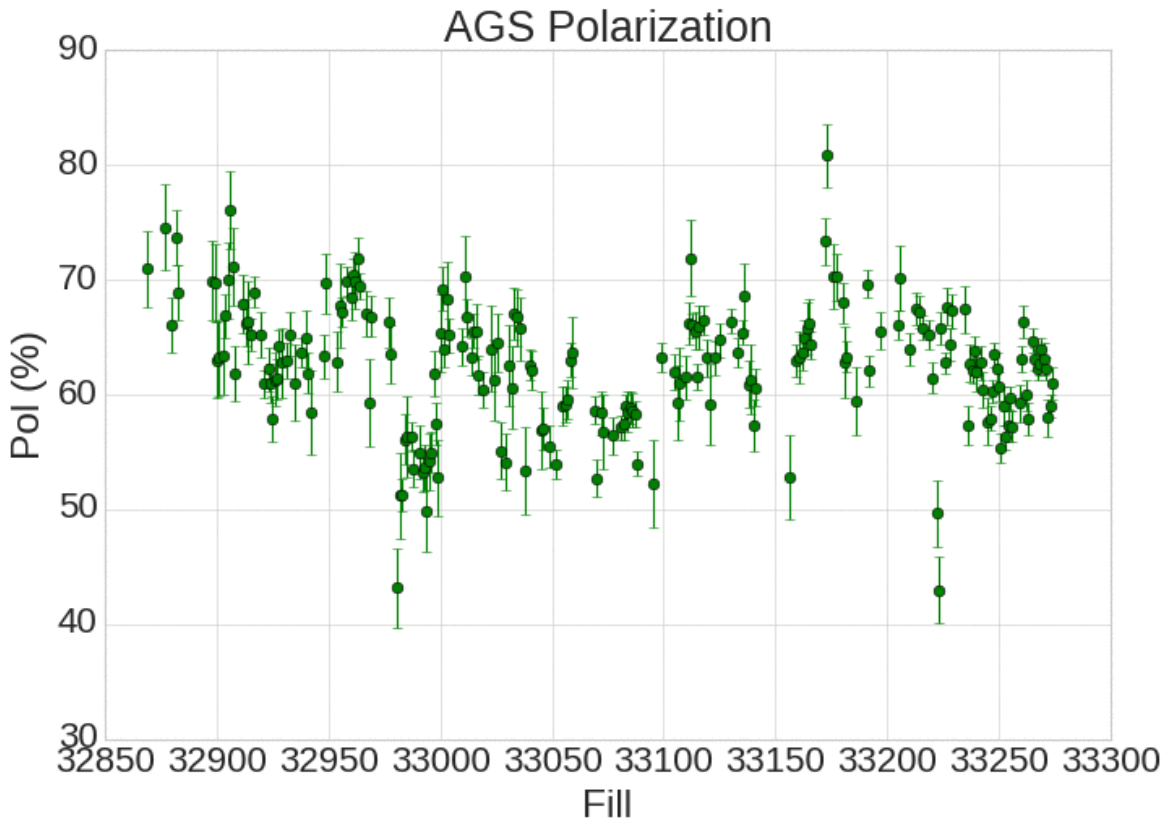


AGS Emittance and Polarization

Linac-to-AGS flattop work last week improved both emittance and polarization (though not to previous best, even at lower intensity

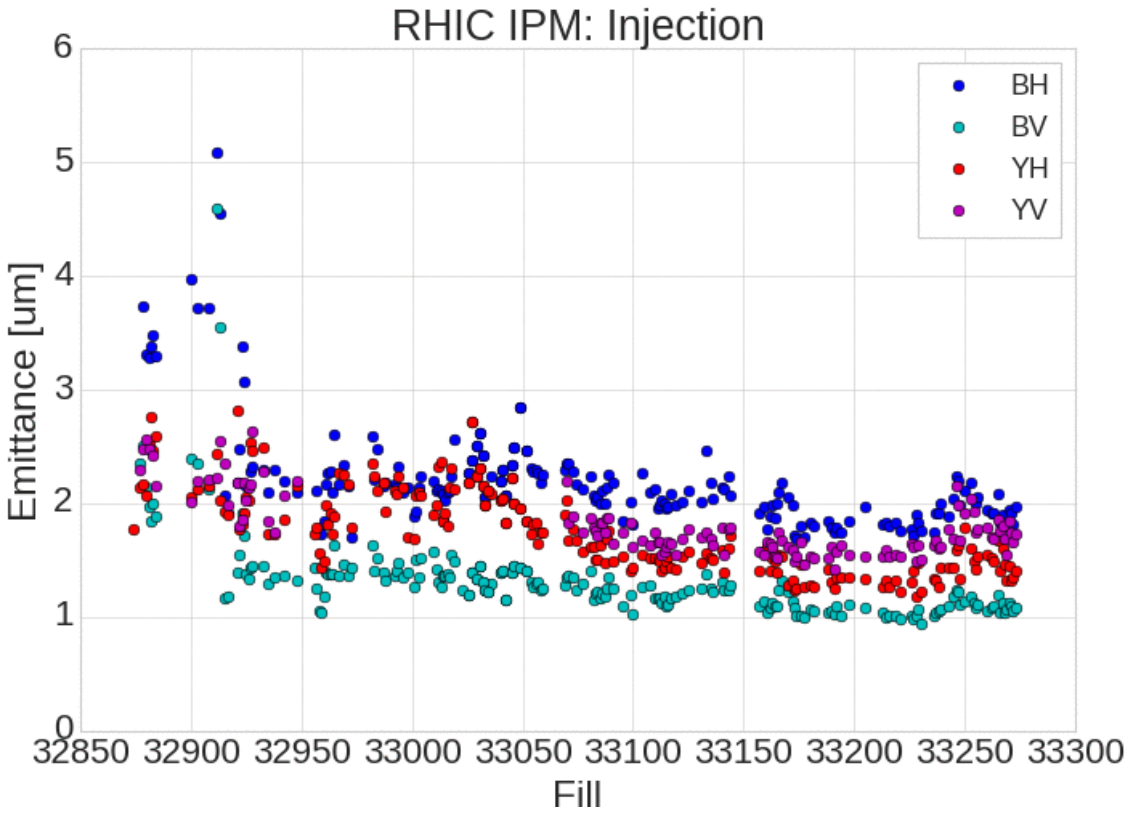
Last three fills polarization trending back down

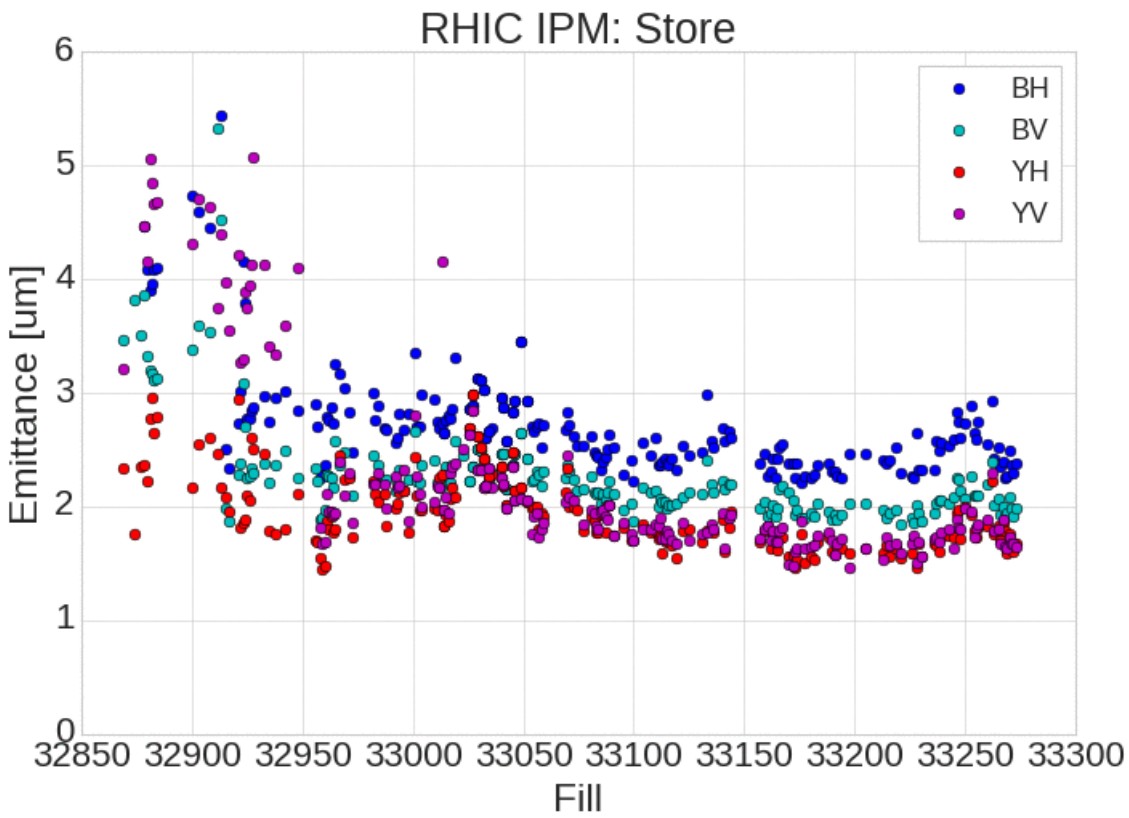




RHIC Emittance

- Trending down, but not yet at previous best. Correlated with AGS

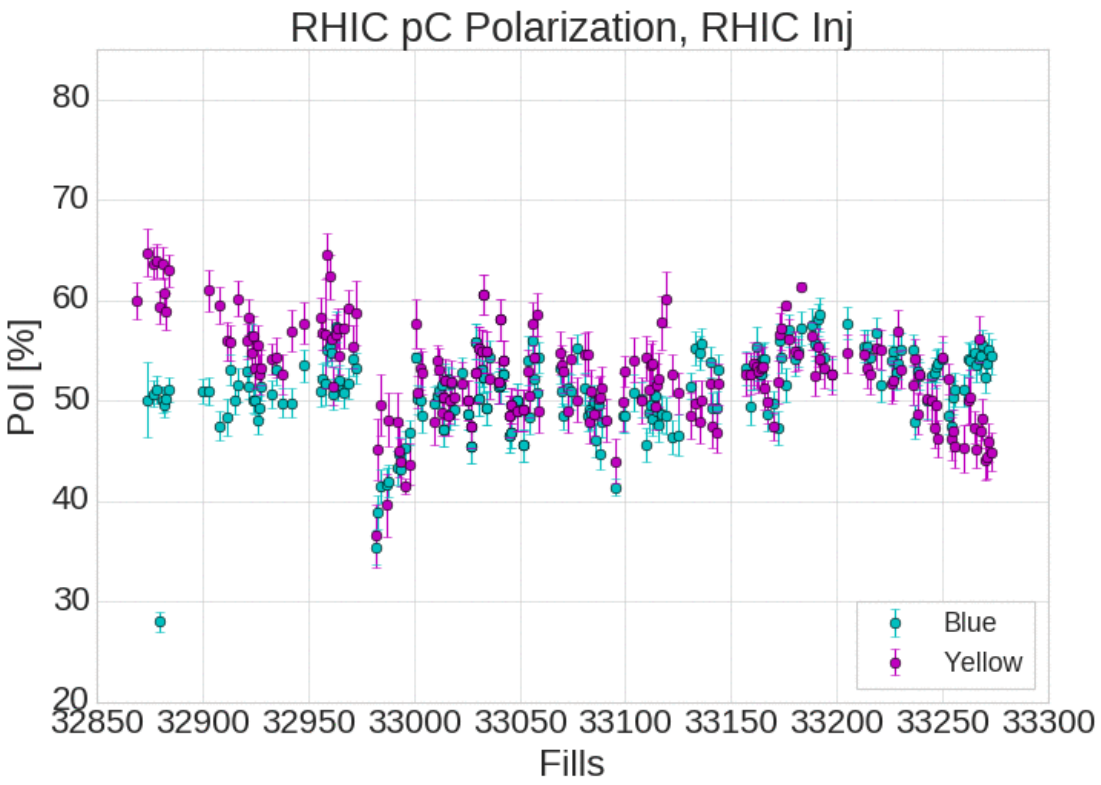


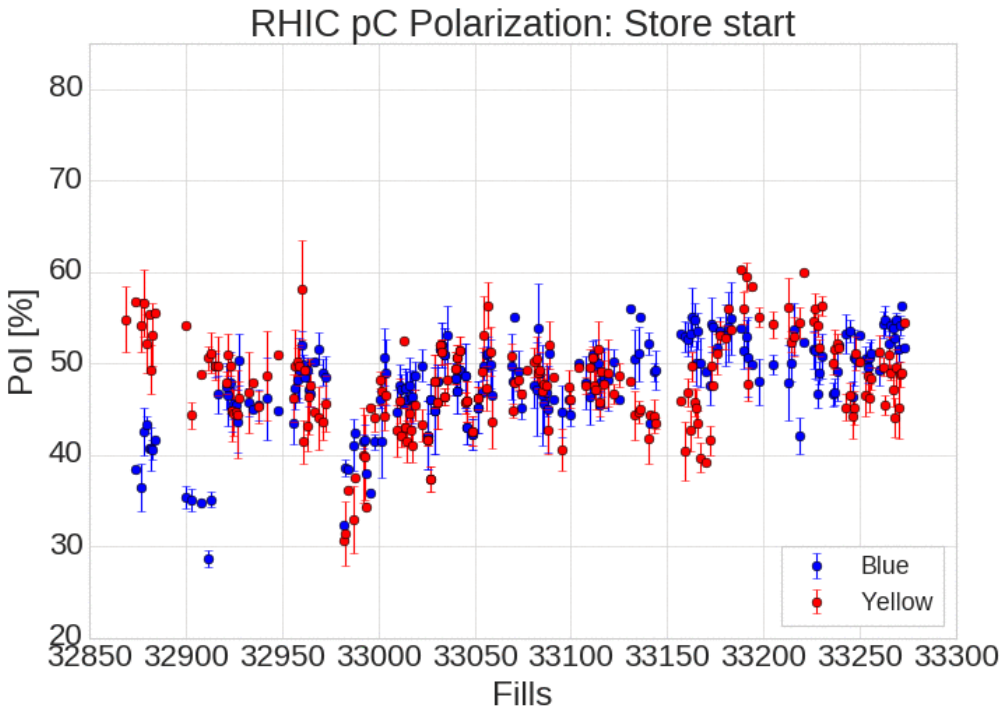


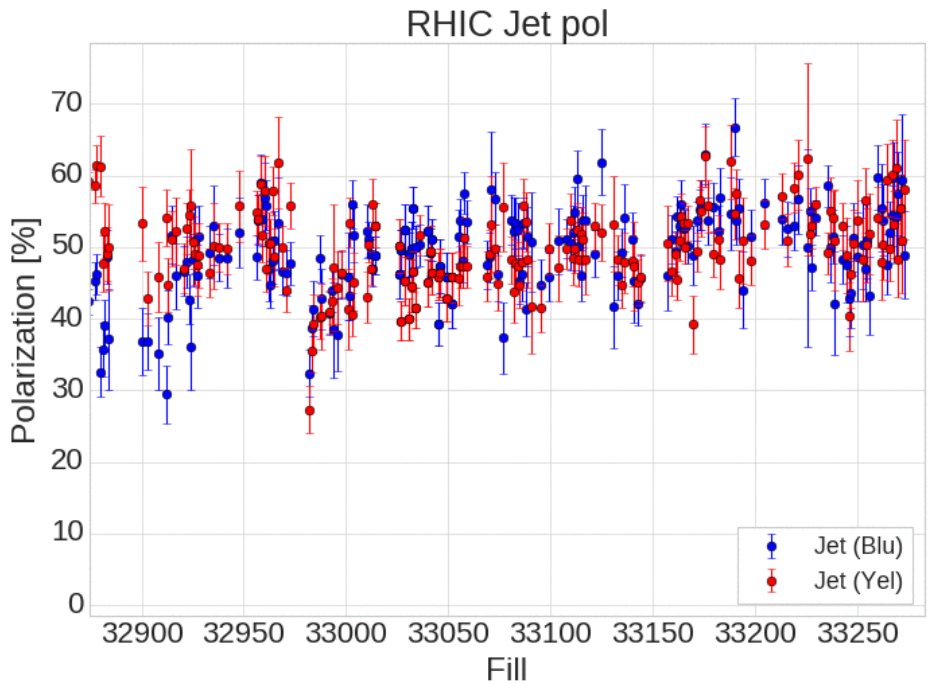
RHIC Polarization

Jet average from weekend ~53% in both rings

Apparent Blue-yellow difference in pC, not obvious in the Jet data







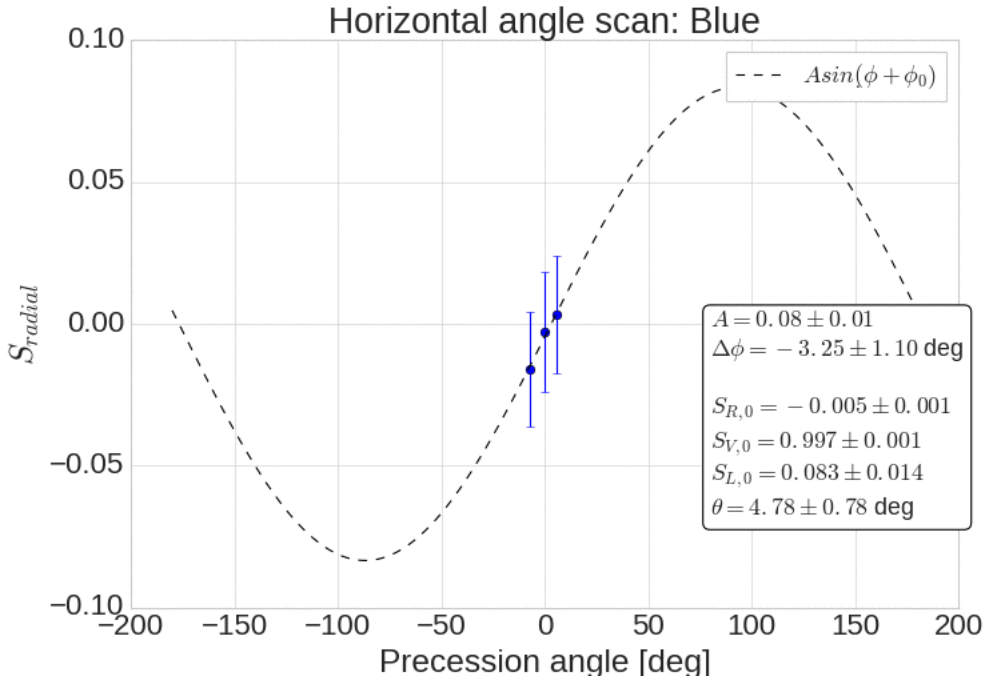
Measurement of stable spin direction at p-Carbon polarimeters using horizontal orbit angles

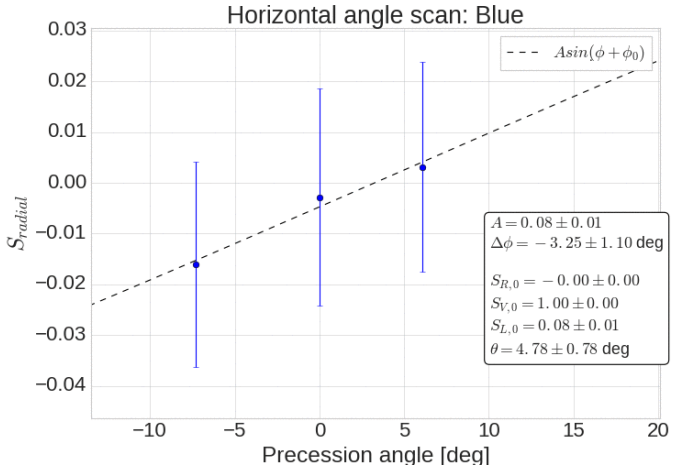
Goal of measurement is to infer the longitudinal component, S_{long}, by precessing the stable spin direction about the vertical and measuring S_{radial}. The vertical component S_{vert} remains constant.

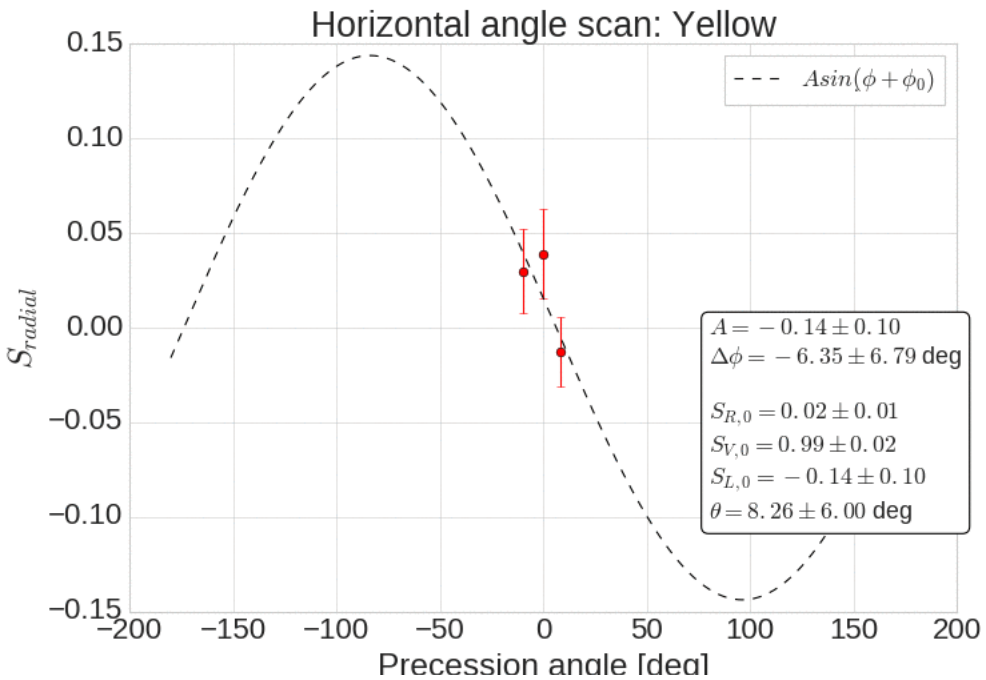
Experimental power limited by aperture and corrector strength (limited to +/- 10 deg of spin precession)

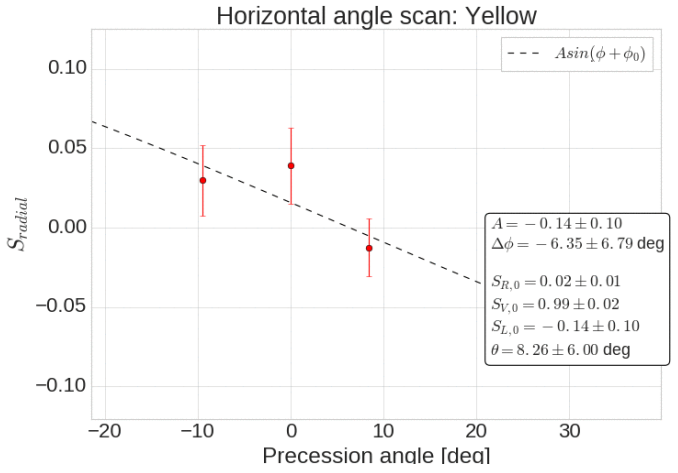
Blue: fit is ok, total tilt from vertical ~5 deg, almost entirely longitudinal

Yellow: Not a good fit, larger resulting uncertainty. We should repeat and combine measurements









Plans

- As much physics as possible
  - 13 days remain in run
  - Minimize impact of mode switches in and out of Au for CeC
- Two hour end-of-store measurement planned to improve statistics on the pC spin direction measurement (Wednesday)