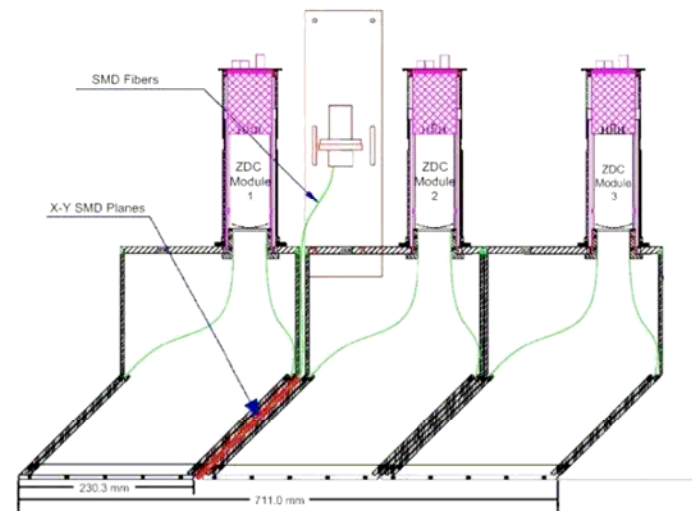
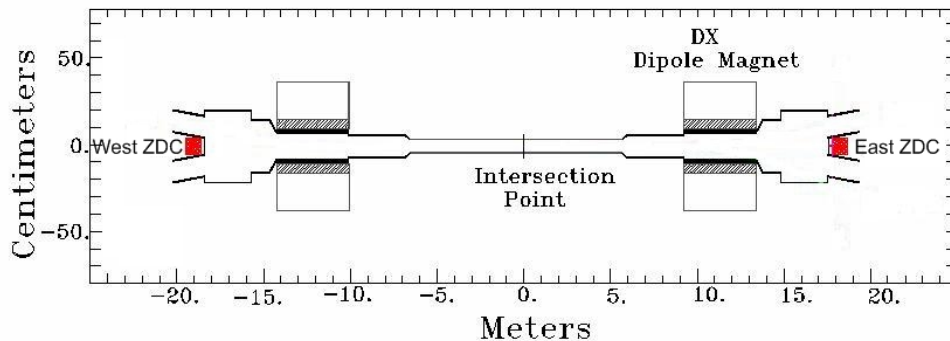


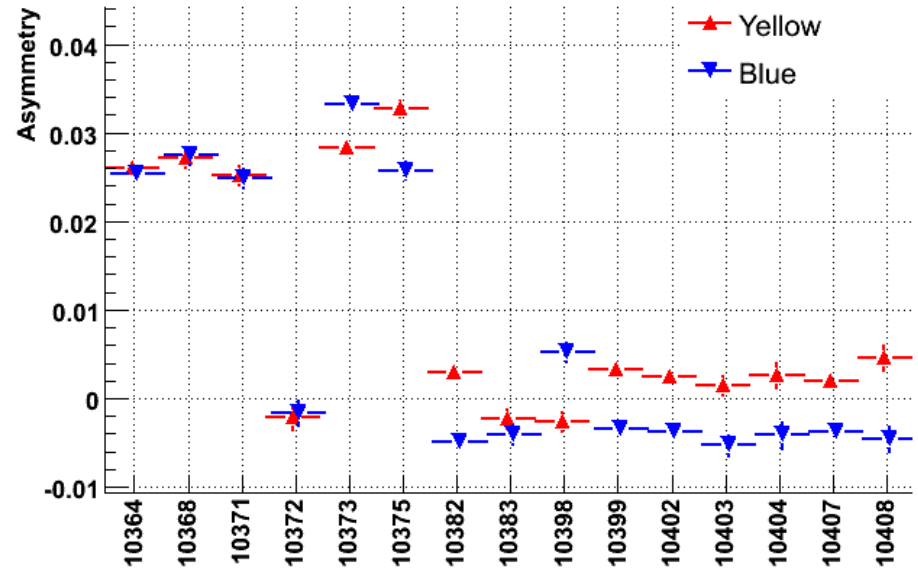
STAR Local Polarimetry Update

- ZDC performance in transverse and longitudinal running
- Observed transverse components
- ZDC asymmetries vs. CNI measurements
- Comments



History of the ZDC

- ZDC commissioned during transverse running
 - 2 analyses see analyzing powers of $\sim 7.5\%$
 - Relatively insensitive to different trigger conditions
- See drop in asymmetry with switch to longitudinal running

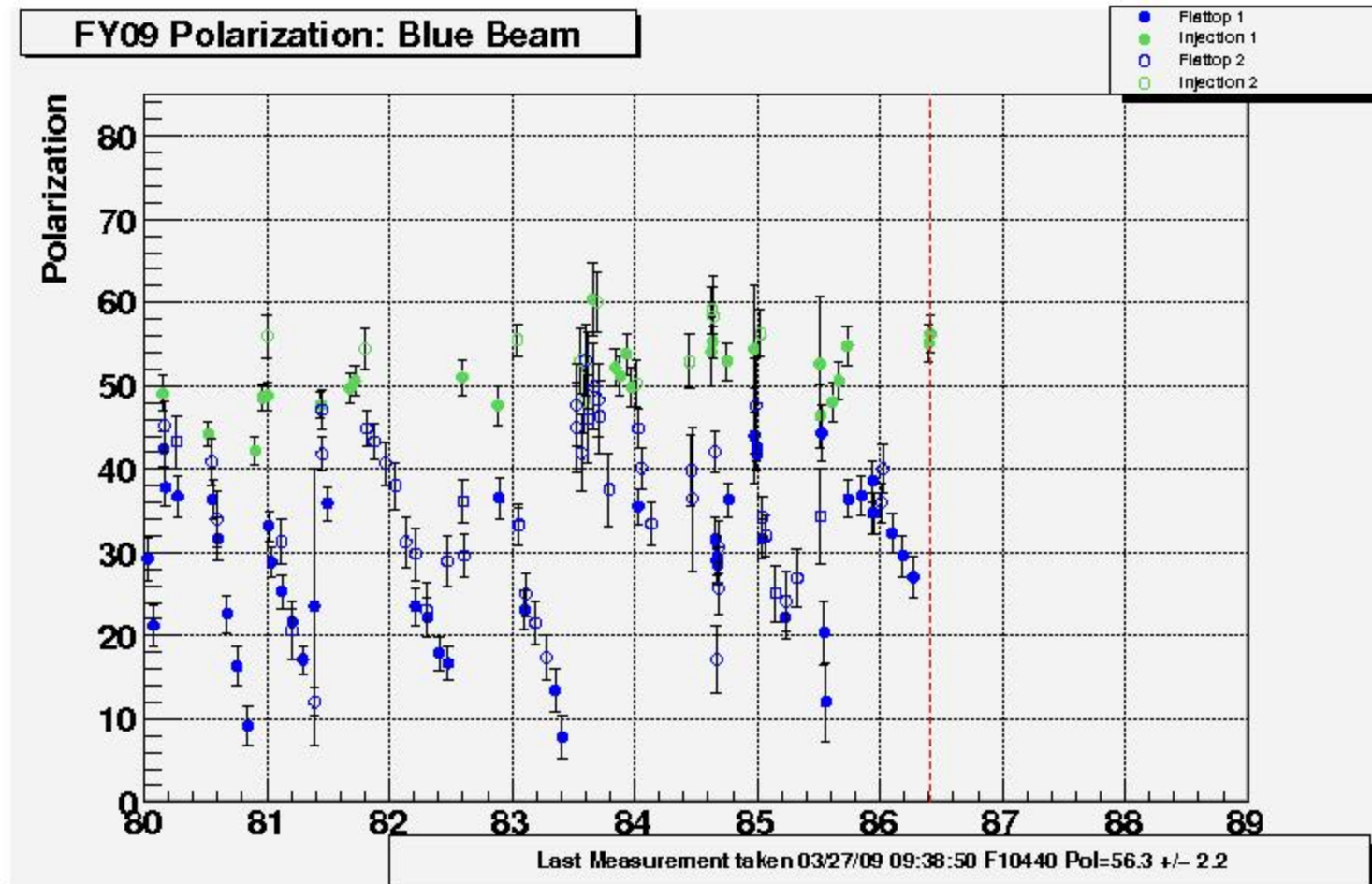


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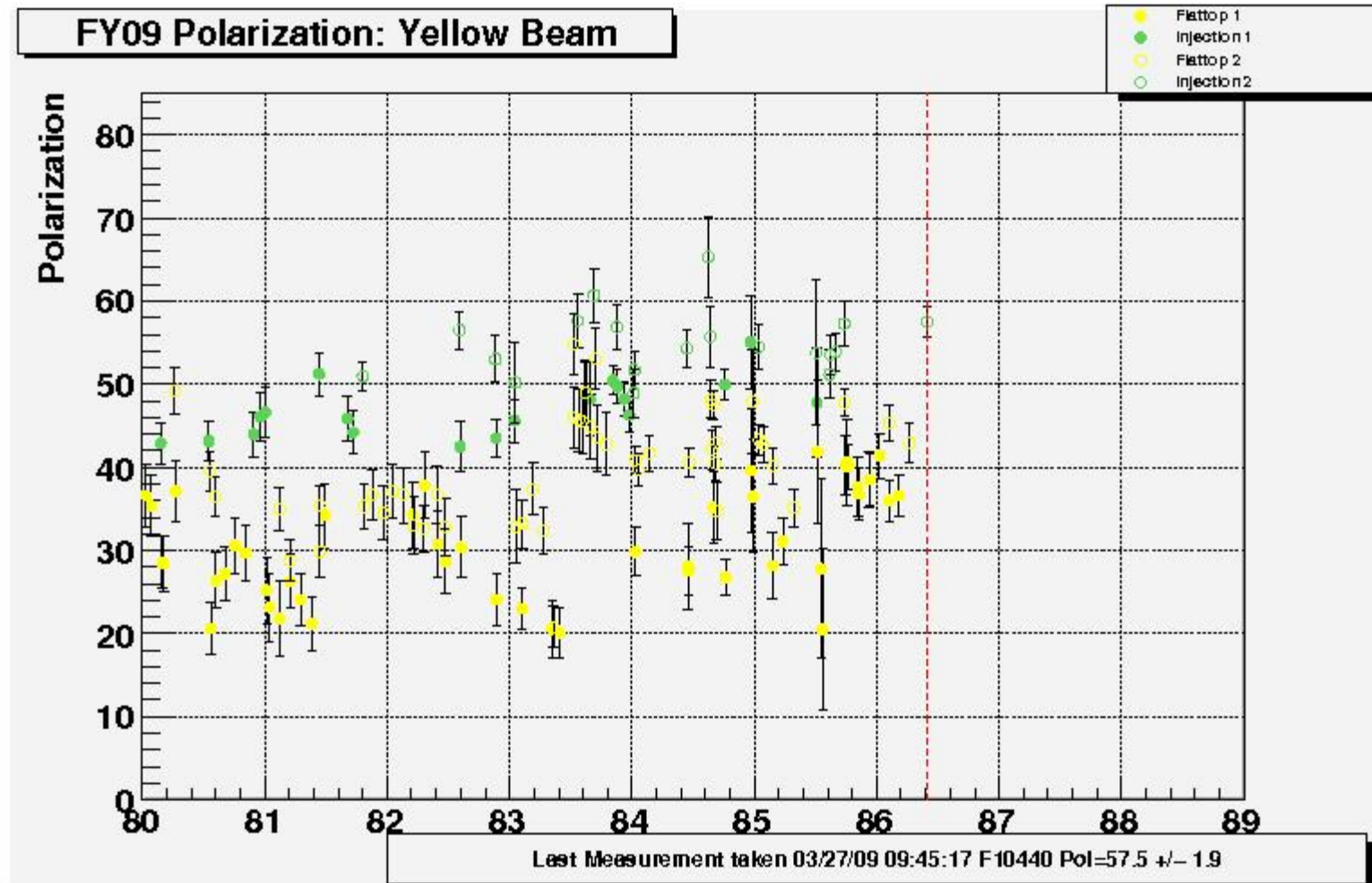
Fill

$$\epsilon_{phys} = \frac{\sqrt{N_L^\uparrow N_R^\downarrow} - \sqrt{N_L^\downarrow N_R^\uparrow}}{\sqrt{N_L^\uparrow N_R^\downarrow} + \sqrt{N_L^\downarrow N_R^\uparrow}}$$

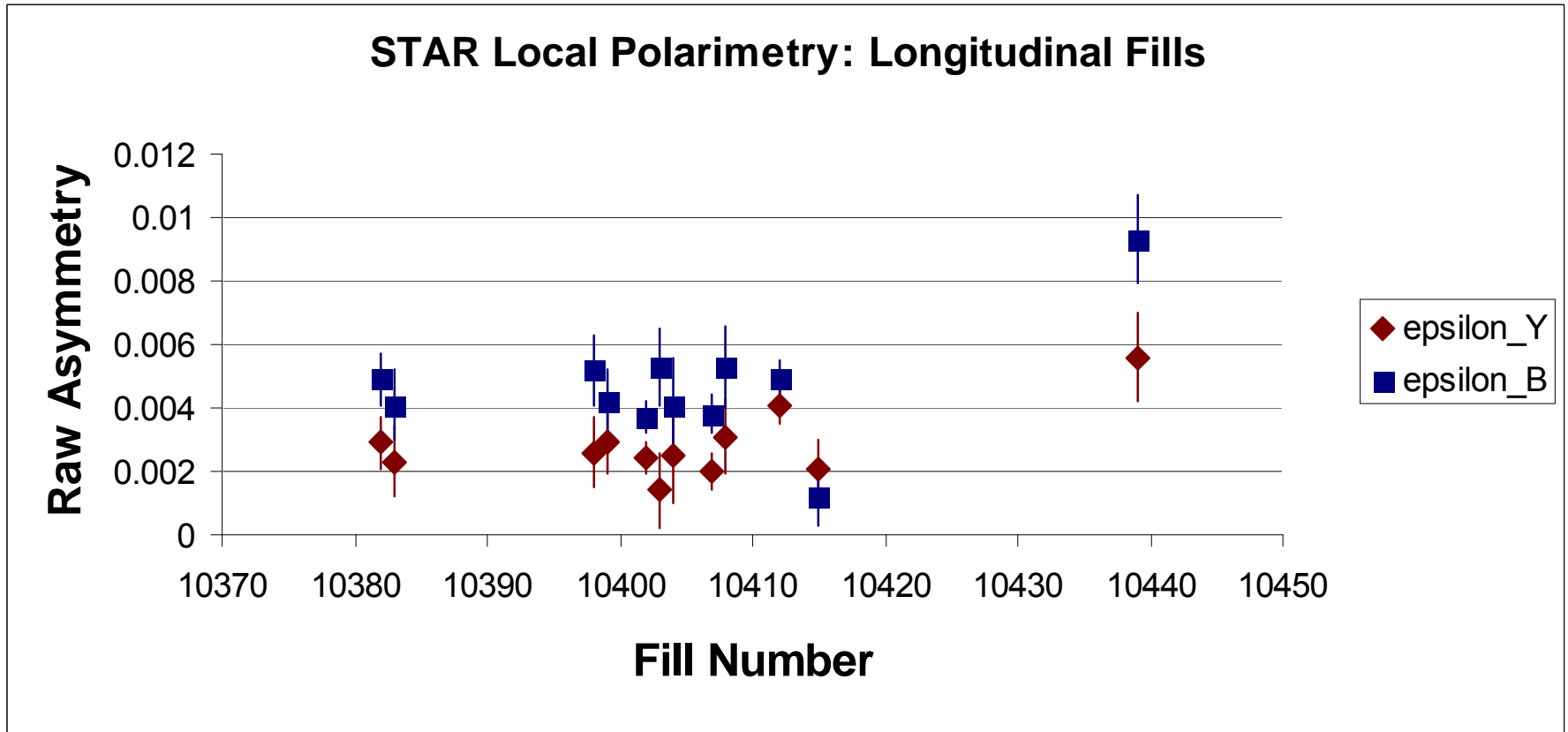
Blue Beam Polarization



Yellow Beam Polarization



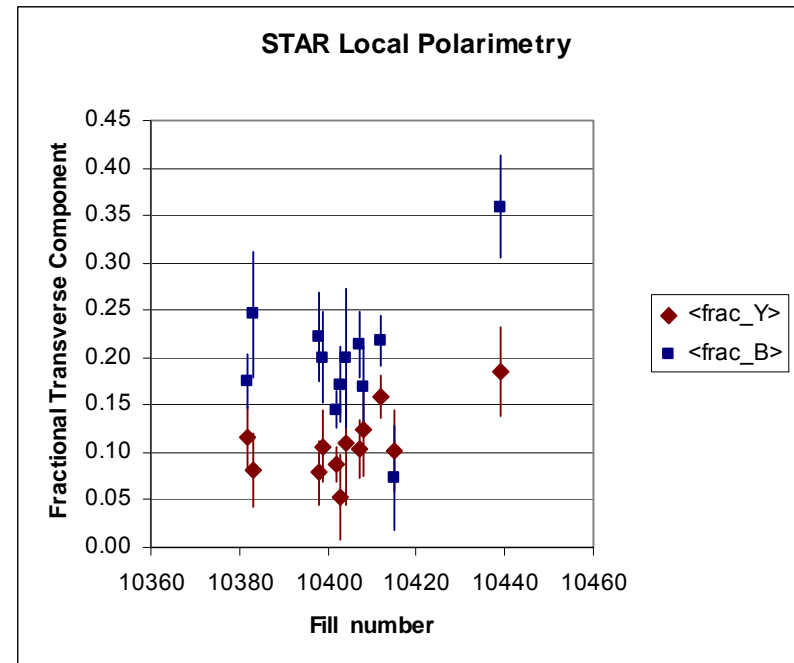
Observed Raw Asymmetries



From the phi asymmetry distribution we find the residual transverse component and the angle – on next 2 slides.

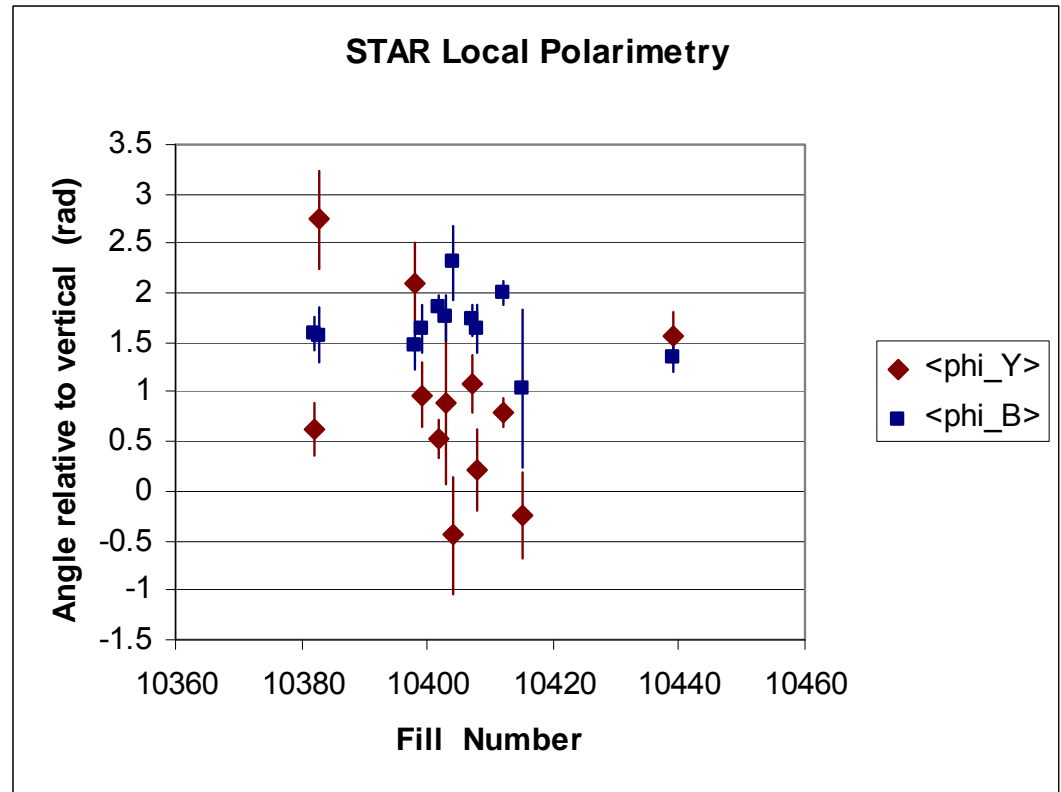
Observed Transverse Components I

- Fractional transverse component on each beam is calculated from
 - Magnitude of the phi asymmetry
 - Analyzing power of 7.5%
 - Polarization measured by CNI
 - $F = \epsilon/A_N/Pol$
- Yellow fractional transverse component is ~10%
- Blue fractional transverse component is ~18%



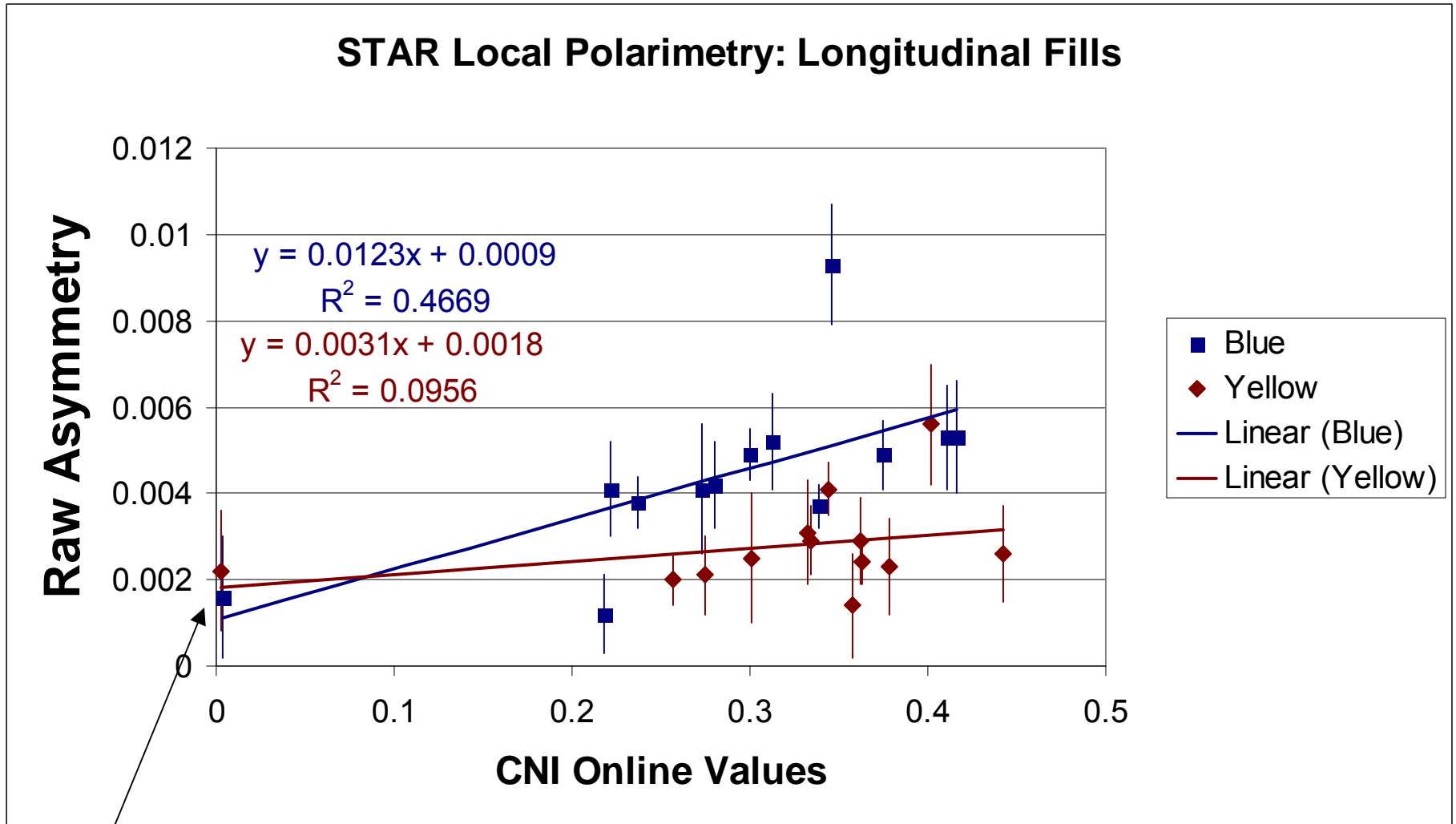
Observed Transverse Components II

- Phi angle is measured looking along the beam **CLOCKWISE** from vertical
- Yellow beam offset is ~ 0.9 radians from vertical
- Blue beam offset is ~ 1.7 radians from vertical



Raw Asymmetries vs. CNI Online Values

STAR Local Polarimetry: Longitudinal Fills



Unpolarized fill
10372

Comments

- ZDC is functioning well as the local polarimeter at 500 GeV
- We request no adjustment to the STAR rotator settings at this time
 - Have been many changes to the machine
 - Will revisit next week