PHENIX Local Pol. Maintenance

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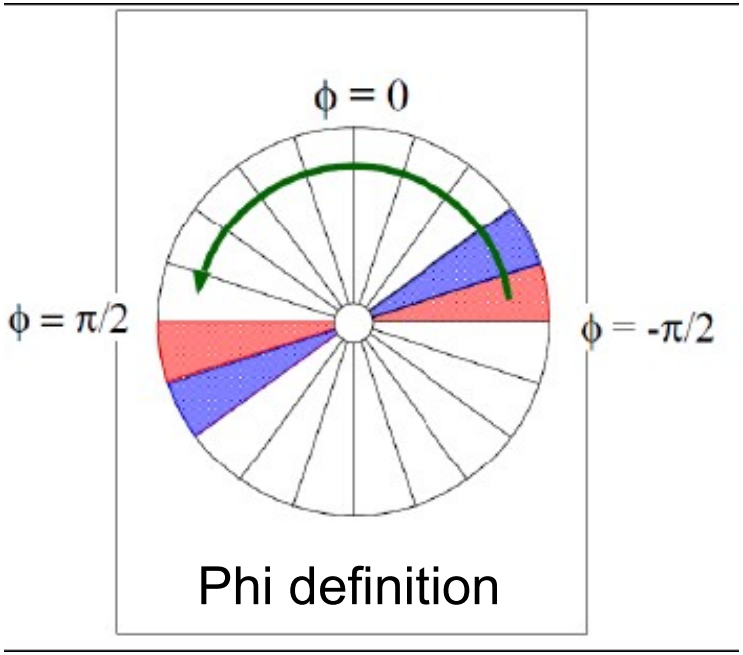
asymmetry calculation

- Use Neutron ID events
- Use Square root formula



Phi definition

Asymmetry is calculated by square root formula

$$A_N \equiv \frac{1}{P}\frac{\sigma_\uparrow - \sigma_\downarrow}{\sigma_\uparrow + \sigma_\downarrow} \approx \frac{1}{P}\frac{\sqrt{N_L^\uparrow N_R^\downarrow} - \sqrt{N_L^\downarrow N_R^\uparrow}}{\sqrt{N_L^\uparrow N_R^\downarrow} + \sqrt{N_L^\downarrow N_R^\uparrow}}$$

POL. at CNI

Raw asym. measured at PHENIX

Commissioning Period
Previous presentation from Seishi was based on dedicated Local Pol. Runs

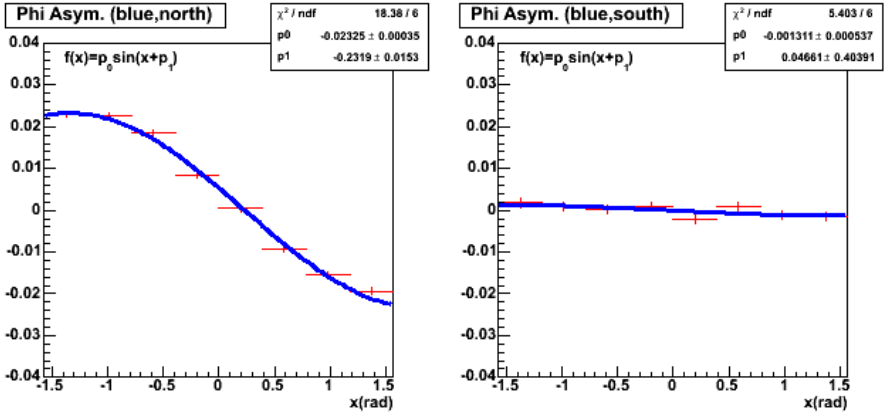
--> Most of PHENIX bandwidth dedicated to ZDC(N|S)&&BBCLL1 Trigger
--> ~100 M triggers / hour
Reconstruction done as fast as possible

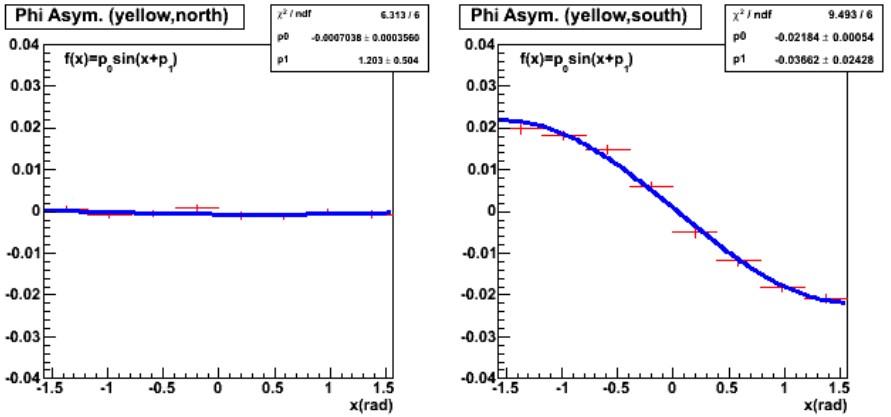
Maintenance Period
Physics Triggers

--> ~200 Hz given to ZDC(N|S)&&BBCLL1 Trigger
--> ~720k triggers / hour
Reconstruction done approximately every 8 hours

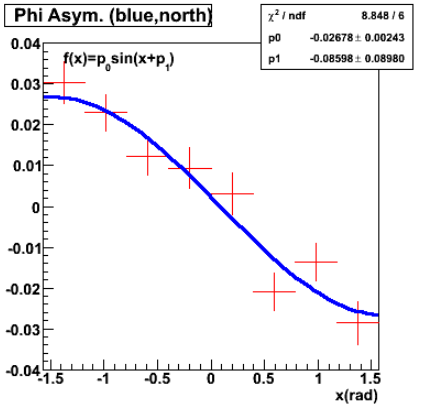
The statistics will not be as good as the previous presentation

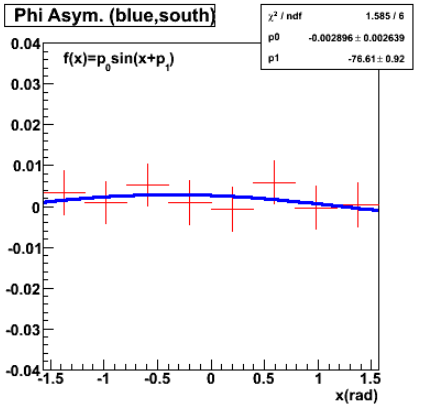
Commissioning

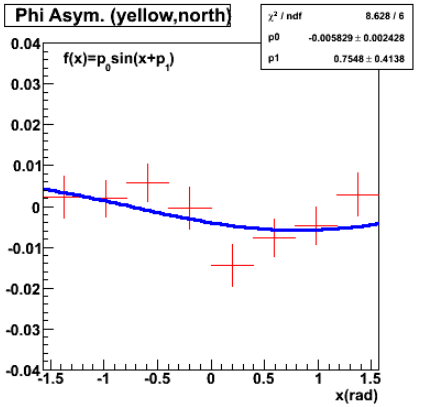


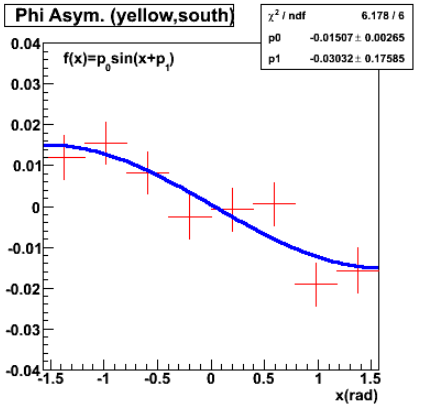


Maintenance

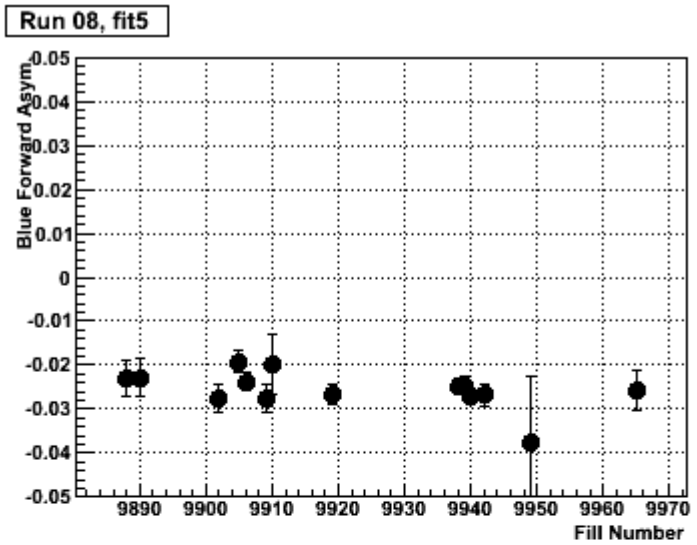


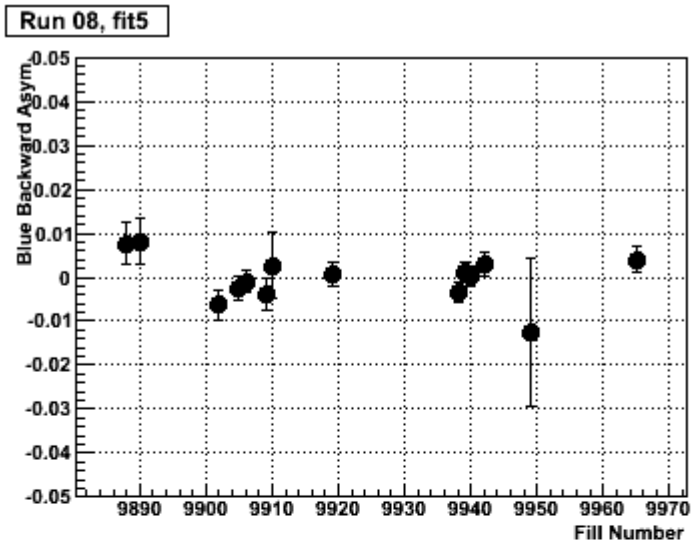


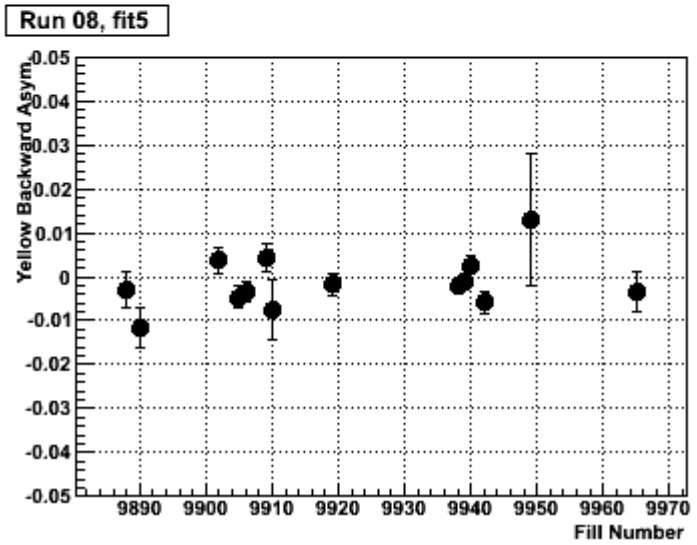


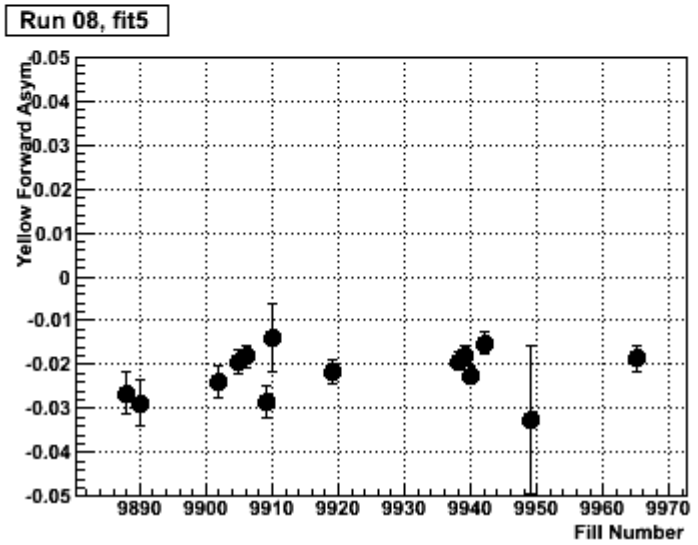


Neutron Asymmetry: Magnitude vs. Fill number

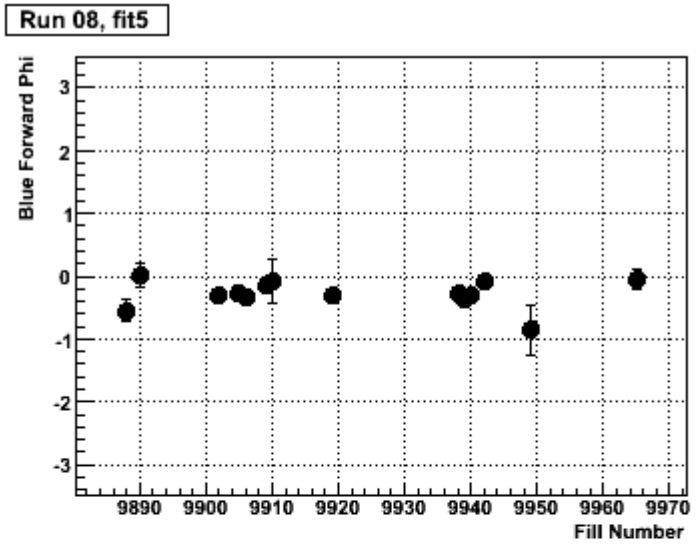


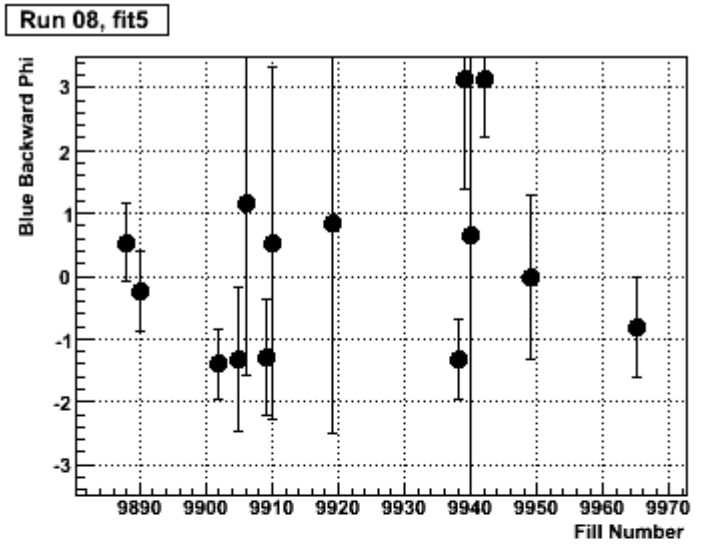


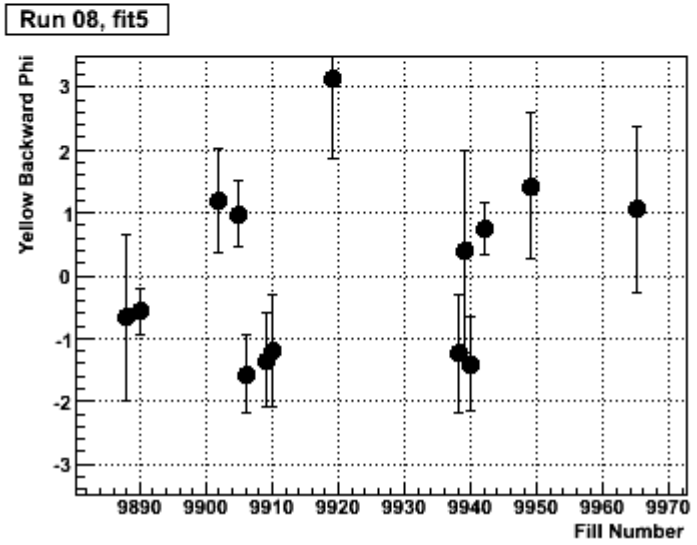


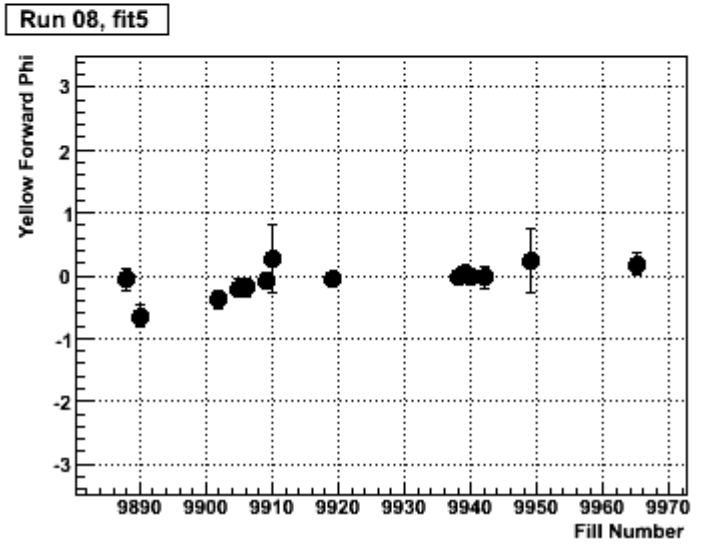


Neutron Asymmetry: Phase vs. Fill number









Summary:

Possibility of a phase shift in blue beam?

Maintenance Local Pol in full swing at PHENIX

Improvements to hardware done on last maintenance day.
--> Most recent fills not in previous plots

https://www.phenix.bnl.gov/WWW/p/draft/jkoster4/localpol/output/
PHENIX only at this point...