

100 GeV Polarized Proton Run

http://www.cadops.bnl.gov/AP/Spin2009_100GeV/

May 29, 2009

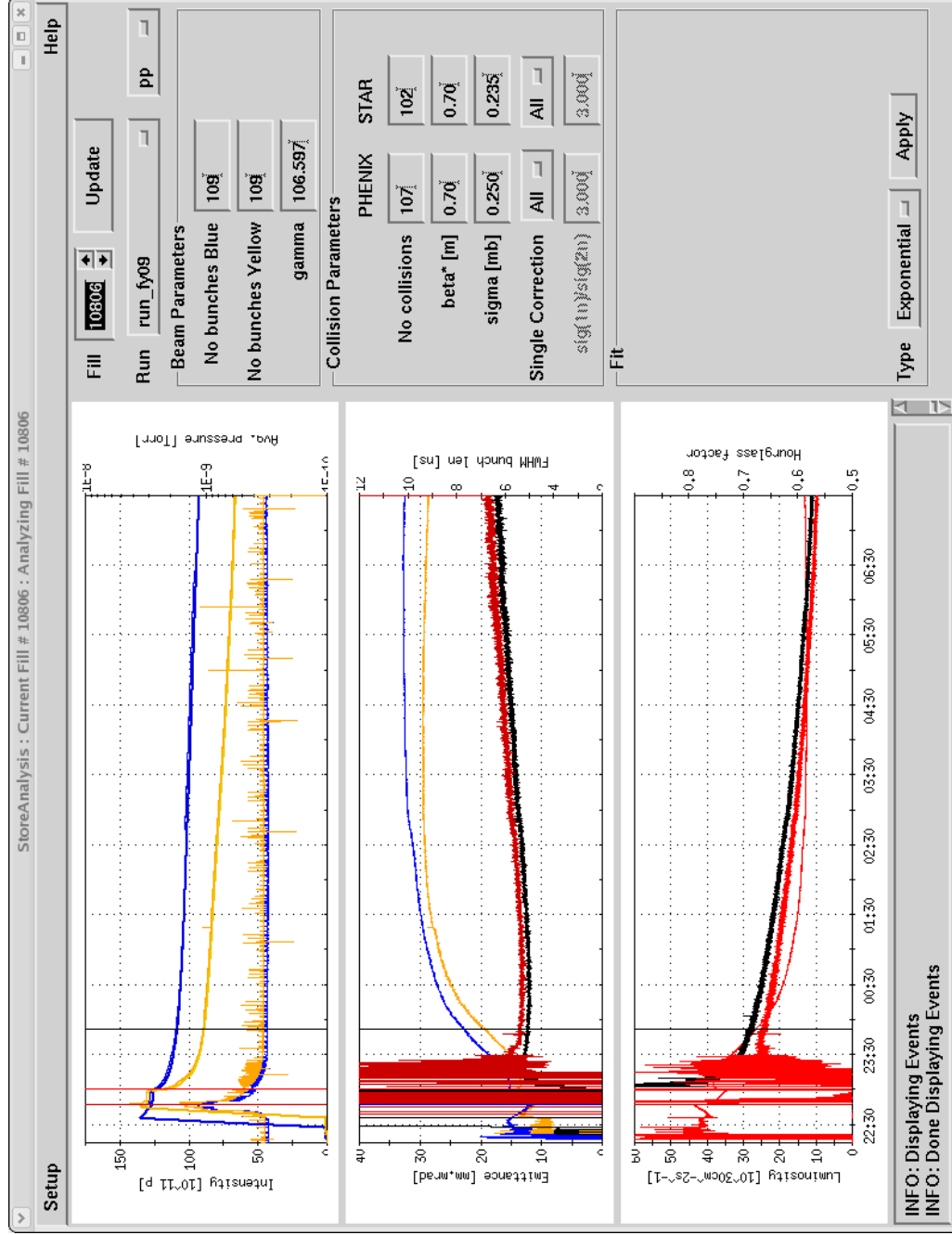
Present status

- Physics running
- Investigated luminosity lifetime problem:
 1. Fewer bunches: Helps ramp efficiency but not luminosity lifetime
 2. No RF voltage ramping at store: Helps somewhat, but bunches get very long. Introduced slow, gentle ramp to 150 kV in 9 h instead of 200 kV in 3 h
 3. Low intensity (1.0×10^{11}): No effect on luminosity lifetime
 4. Measured and adjusted store conditions
 5. Relaxed nonlinear chromaticity correction
- Spin flipper commissioning

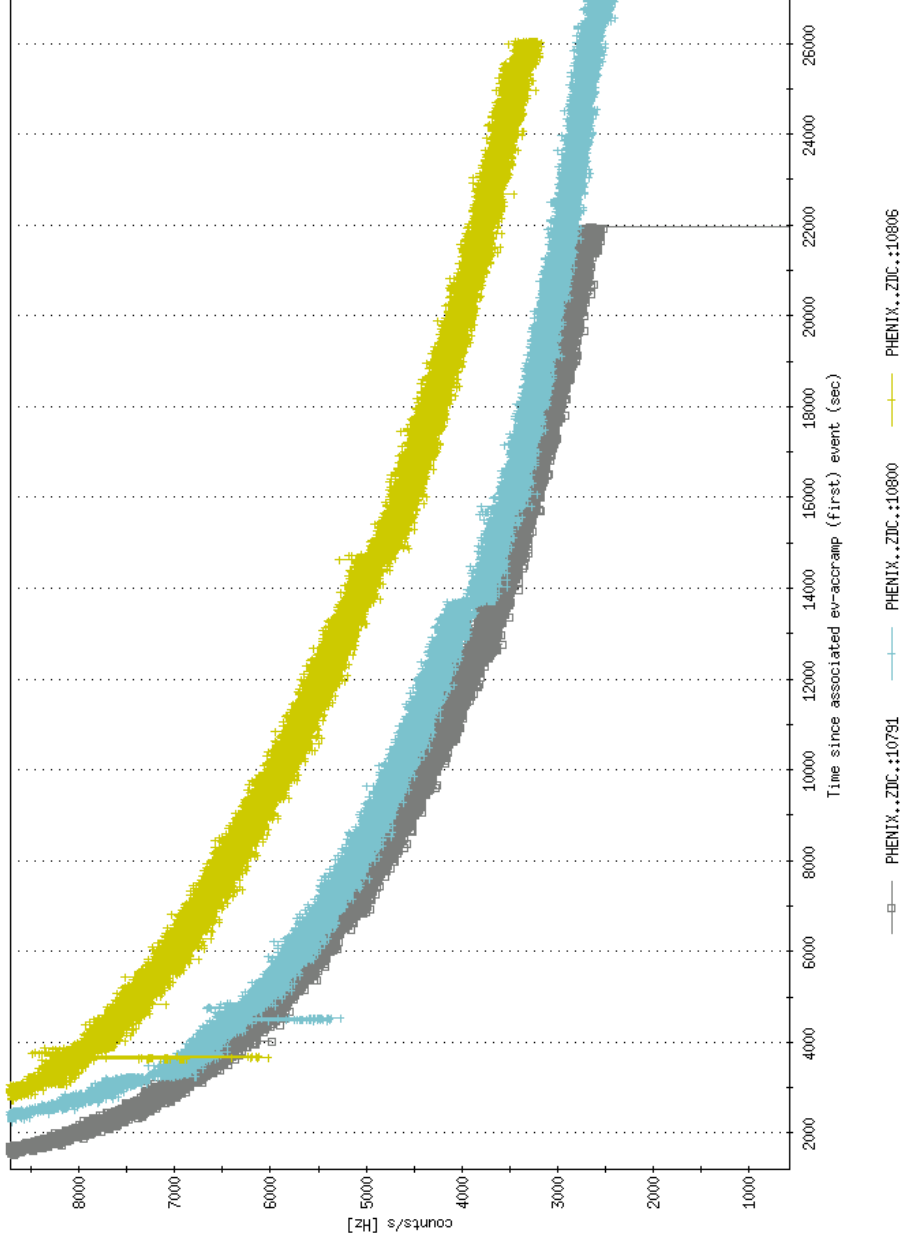
Machine Development May 29, 2009

- Decoupled both rings
- Corrected orbits
- Set Yellow sextupole family where it belongs
- Tried different sets of nonlinear chromaticity correction in Blue; no difference in store lifetime
- Adjusted linear and nonlinear chromaticity on rotator ramp and at store
- After decoupling, Blue vertical BTF shows double peak without collisions. Tune modulation around 0.05 Hz, $\Delta Q \approx 0.001$.
- Overnight physics store 10806

Store 10806



PHENIX rate comparison



Better luminosity lifetime than previous two stores, but not as good as Run-8 performance

Plan for the week

- Set up and evaluate $\beta^* = 80$ cm ramp pp100-91rot (today)
- If luminosity lifetime is still unsatisfactory, back to $\beta^* = 100$ cm; either Run6/8 ramp or further unsqueeze current ramp (Monday)
- Physics running
- Continue spin flipper commissioning