

100 GeV Polarized Proton Run

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

June 12, 2009

Present status

- Provided transverse polarization for STAR 6/2, using last year's $\beta^* = 1$ m ramp
- 12 h APEX Thursday; used several hours for $\beta^* = 1$ m store tuning. Finally, lifetime in collision is as good as last year.
→ No noise!
- Provided two stores with high bunch intensity ($2e11$), fewer bunches (65x65, 76x76). No luminosity gain compared to regular 109x109 stores.

- Machine development on Friday to find better working point for Blue, above .70. Lost high intensity ramp; back to physics.
- Asymmetric fills Sunday night to suppress π -mode by breaking the symmetry. No success. Back to symmetric fills.
- Yesterday's store (10904) had 10 h luminosity lifetime with large emittances (25π) due to AtR flags. Plan to increase emittance intentionally at store for a few fills, using BBQ kickers.

- Pretty much exhausted our ideas on improving luminosity lifetime.
- Yellow bunch intensity kept at $1.4 \cdot 10^{11}$ due to “intensity filter” effect on the ramp. Increase Blue bunch intensity to maximize luminosity.
- Power dips are becoming more frequent.

Plan for the rest of the run

- Physics, physics, physics...!
- LLRF development 6/25 (10 h)
- pp2pp starts 6/29

A few words about pp2pp

- 6/29 – 30: Ramp development for pp2pp
- 7/1: pp2pp physics run
- Maximum total intensity per beam: $5 \cdot 10^{12}$ protons
 - $0.5 \cdot 10^{11}$ protons/bunch in 109 bunches
 - PHENIX peak luminosity around $5 \cdot 10^{30} \text{ cm}^{-2} \text{ sec}^{-1}$
(factor 10 below present luminosity; $\beta^* = 70 \text{ cm}$)