

# 100 GeV Polarized Proton Run

[http://www.cadops.bnl.gov/AP/Spin2009\\_100GeV/](http://www.cadops.bnl.gov/AP/Spin2009_100GeV/)

April 10, 2009

# Machine configuration and parameters

- Beam energy: 100 GeV
- Ramp: pp100-90 (derived from 250 GeV ramp up to 100 GeV, then squeeze)
- Polarization orientation: longitudinal at PHENIX and STAR
- $\beta^* = 70$  cm at PHENIX and STAR, 7.5 m elsewhere
- Ramp tunes: (.73/.72) up to 100 GeV, then tune swing to (.695/.685)

## Hardware commissioning

- LLRF: 12 h during switch-over, 12 h one month later. Required for 9 MHz rebucketing.
- 9 MHz RF: data taking to determine required strength of Yellow damper; possible implementation of Yellow damper later on
- Spin flipper: hardware completion 4/27, then commissioning during machine development time, NOT APEX

# Setup plan

## Day 0:

- RHIC LLRF work, using 250 GeV ramp, 12 – 18 h (Alex et al.)
- Maintenance
- Copy trim settings from pp93 to pp100-90 (Todd)
- Ramp test, 5 – 6 h (Don)

## Day 1-3:

- Adjust bend trim, if necessary due to different hysteresis.  
Best guess: Blue  $15e-6$ , Yellow  $17e-6$  (from pp83)
- Ramp development (no rotators yet), using tune feedback
- Check separation bumps

## Day 4-5:

- Rotator ramp development, using tune feedback (Waldo)
- Nonlinear chromaticity correction (Yun, Guillaume)
- IR nonlinear corrections (Fulvia)
- Setup collimation for vertical polarization (Angelika)
- Overnight stores, with vertical polarization
- JET running

## Day 6-12:

- Setup collimation for rotator ramp (Angelika)
- Overnight stores, longitudinal polarization
- JET running
- Increase number of bunches and bunch intensity
- Fine-tune the ramp to maximize polarization
- Vernier scans (Angelika)

## Day 13-:

- Physics
- Development during Day shifts
- Maintenance every other week, APEX every Wednesday