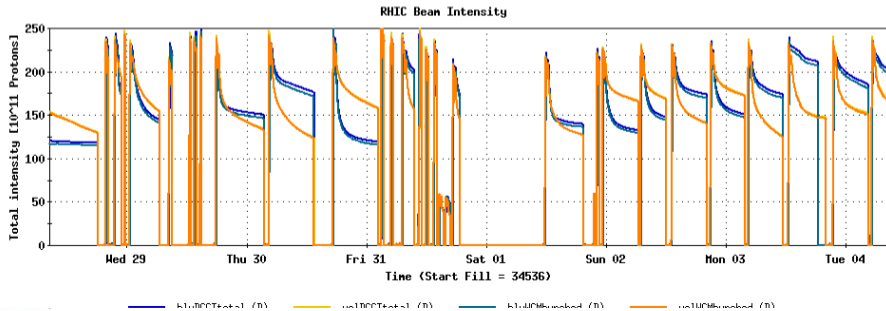
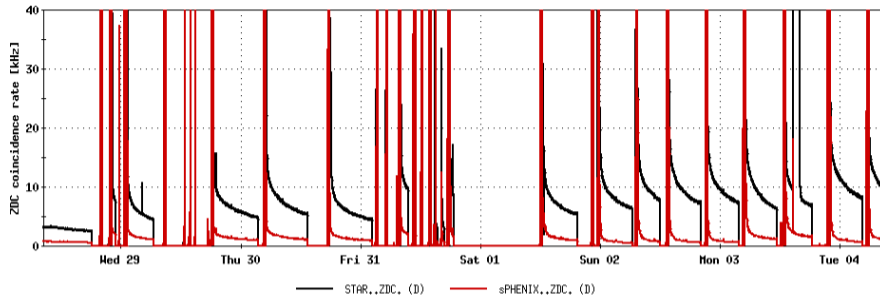


RHIC Status

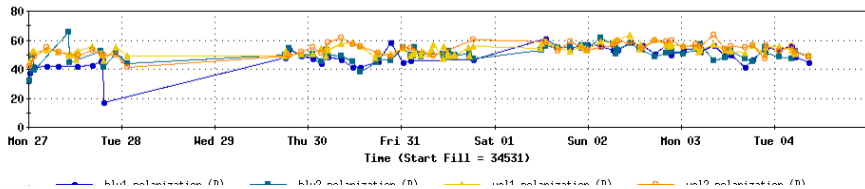
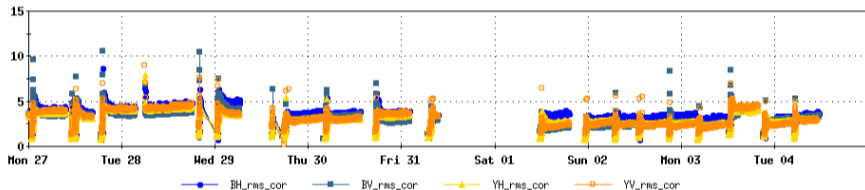
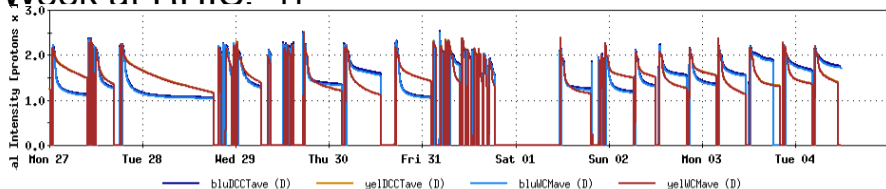
Kiel Hock

June 4, 2024

Last Week at RHIC



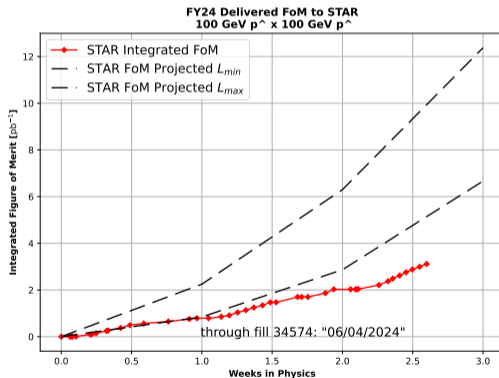
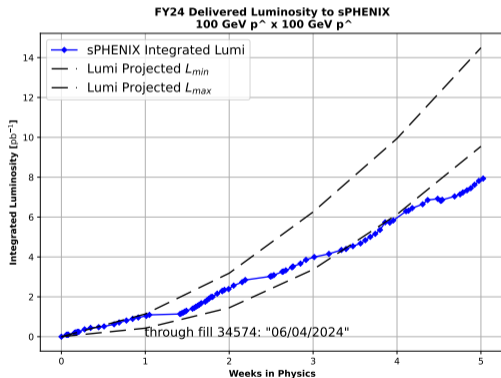
Last Week at RHIC. II



RHIC status and Lumi Projections

/ 111x111 physics running since 4/30.

Preliminary luminosity accounting



RHIC Status

- / physics running with 2.1×10^{11} /bunch at store
- / we are now at the end of the "ramp up" period so luminosity projections are constant
- / integrated luminosity still a factor of 2 off from best Run15 stores
- / polarization up into the 50-60%, higher in yellow
 - / take spin tune measurement in blue to check snake rotations
- / Machine development Wednesday improved emittance growth along the energy ramp
 - / Inserted 56 MHz FPC more to further damp HOMs
 - / adjusted octupole strengths along ramp and further optimized lifetime
- / bug with feedback editor and implementation with feedbacks
- / power dip Friday due to vehicle accident at Bellport
- / cold snake has increase heat load
- / Single ring background studies for sPHENIX ongoing
- / Maintenance tomorrow, 6/5
- / APEX Thursday, 6/6

Moving Forward

To improve luminosity:

- / reinstall tune bridge to move away from higher order resonances to study cause of emittance growth
- / ramp with different crossing angle at sPHENIX to determine if that is exciting higher order resonances on ramp
- / * squeeze MD
- / investigate collapse of IP8+IP6 bumps at different times
- / continue optimizing store lifetime
- / advance intensity

To improve polarization

- / measure spin tune of blue at injection to verify:
 - / nominal snake rotation at injection
 - / spin match from AGS to RHIC

Physics Checkpoints

- squeeze at IP8
- 1.0e11 protons per bunch @physics
- complete low-luminosity run for STAR
- sPHENIX running with nominal store conditions
- 1.7e11 protons per bunch @physics (Run12 maximum)
- 2.0e11 protons per bunch @physics
- 2.4e11 protons per bunch @physics (Run15 maximum)
- 2.4e11 protons per bunch and 60% polarization @physics (Run15 maximum)
- switch to alternate AGS setup
- 2.5e11 protons per bunch @physics
- 3.0e11 protons per bunch @physics