

PHENIX Run-15 Status

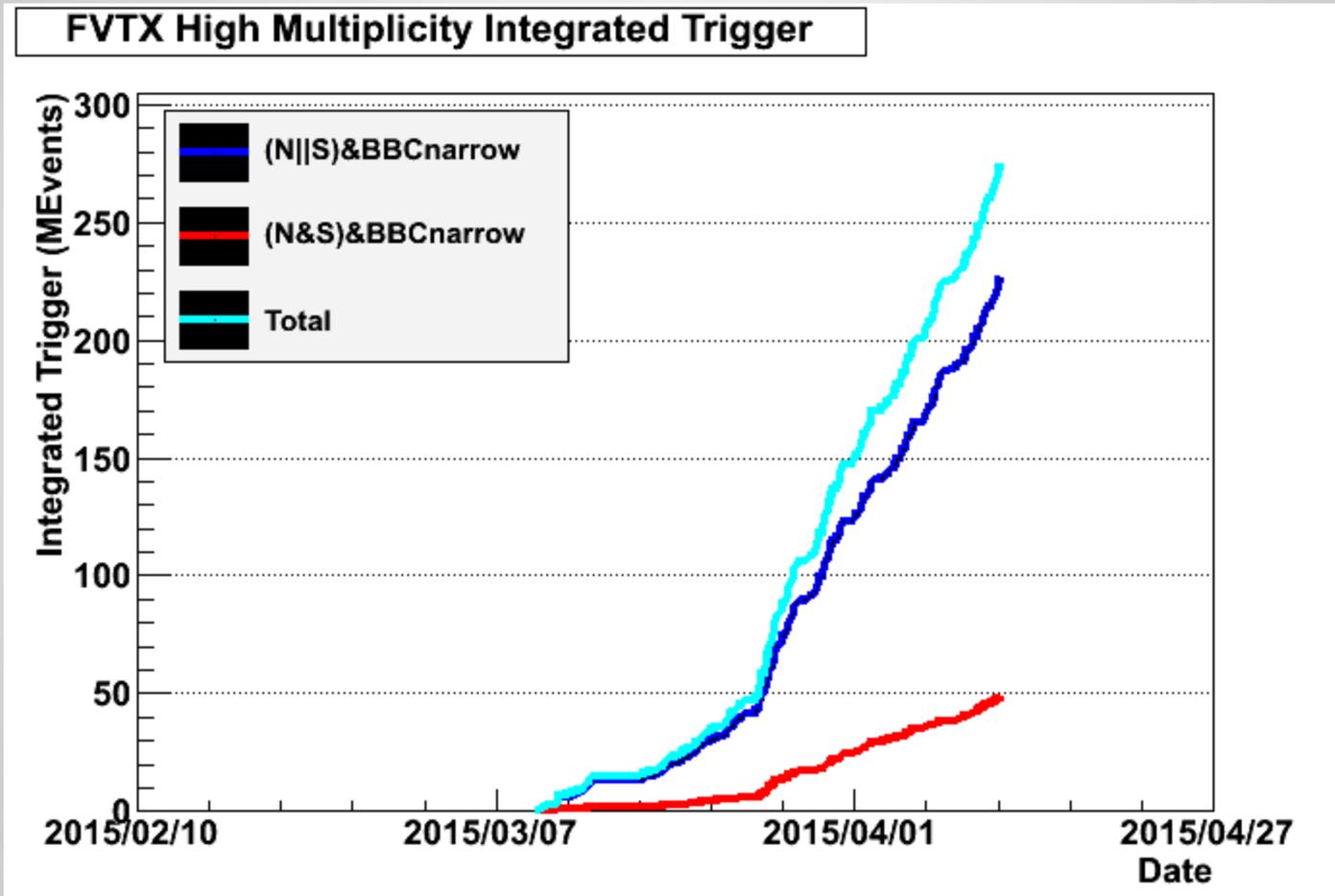
Douglas Fields

PHENIX Run-15 Run Coordinator

University of New Mexico



FVTX High Multiplicity trigger



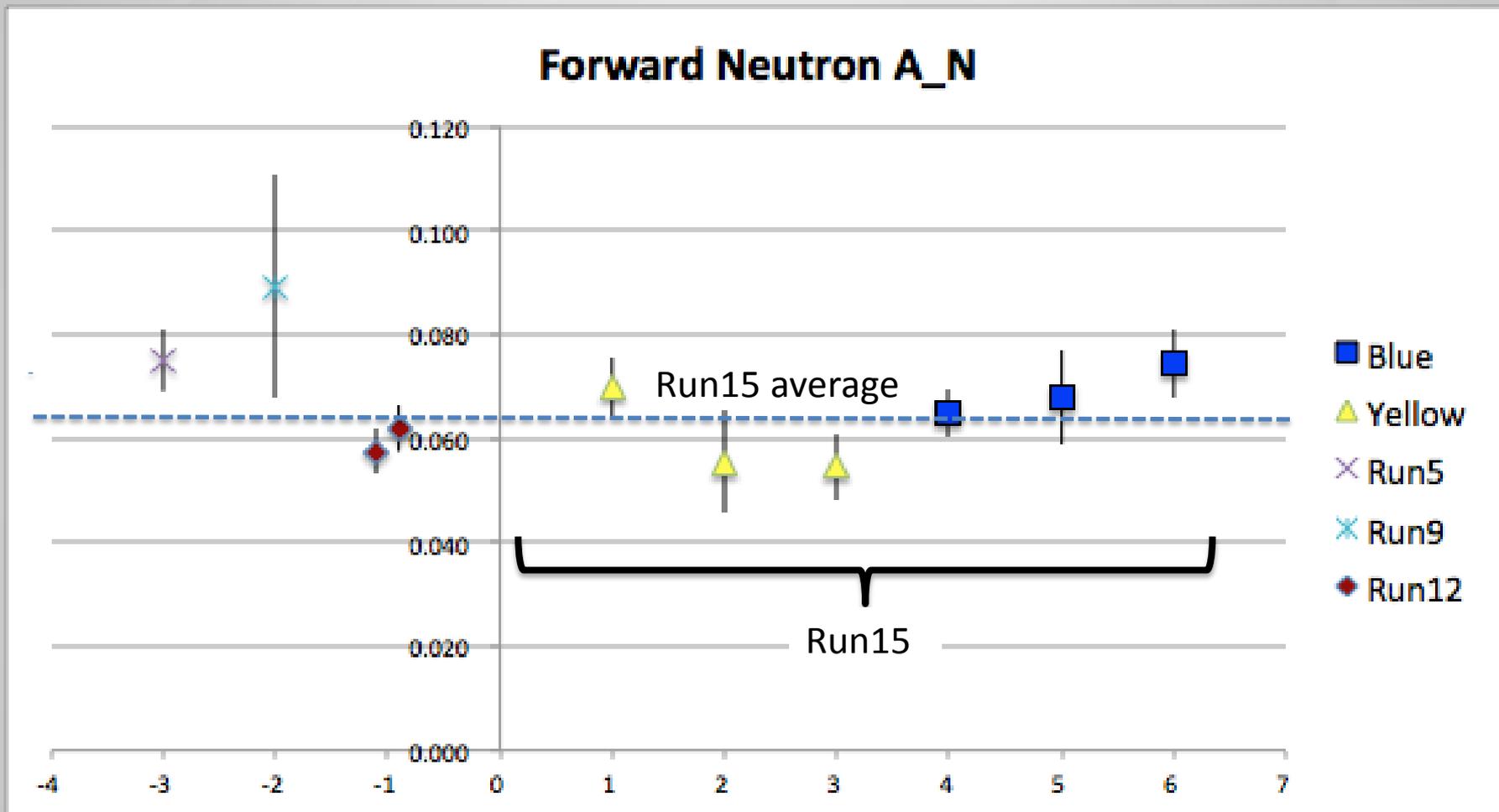
MPCEX update

- Both MPC-EX N,S running in PHENIX DAQ since 3/17:
 - Final timing adjustments completed 3/26
- Working on detector cooling to reduce leakage currents:
 - OK for Run-15, improve for Run-16
 - Install additional cooling during maint. day 4/15
- Improved running efficiency:
 - Reduced “Stop the DAQ” conditions
 - Improved speed of “feed” initialization
- Making minor adjustments:
 - Reduced zero suppression cut from 5-sigma to 3-sigma above pedestal
 - Reduce gain of last layers to reduce overflows
- Offline analysis working on calibrations:
 - Pedestals extremely stable
 - MIP calibration of MPC-EX minipad gains making progress
 - High/Low gain ratio calibrations started
 - MPC calibration underway
 - Calibrations iterating with π^0 analysis



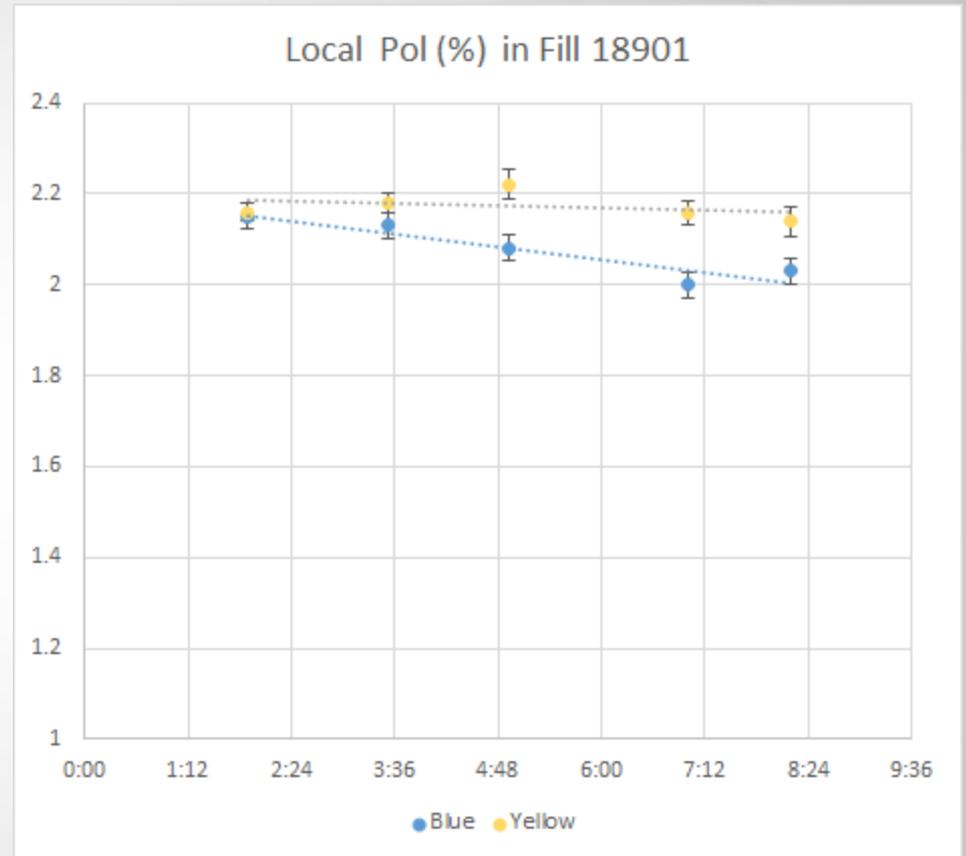
Local Polarimeter

Forward Neutron A_N



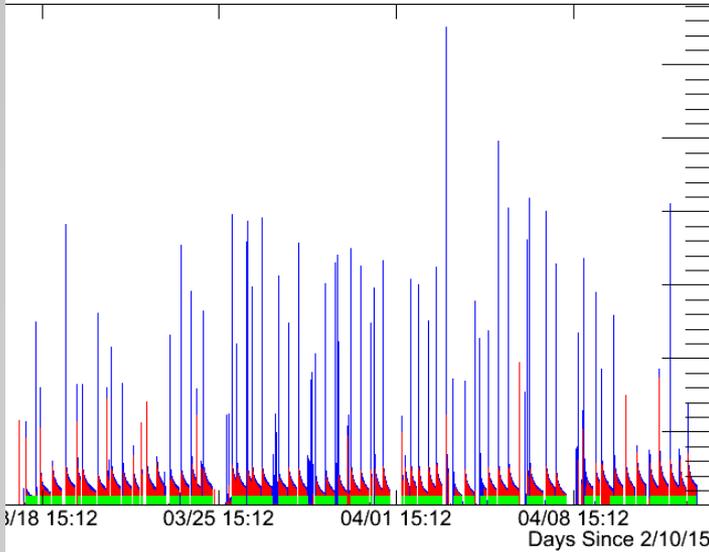
Local Polarimeter

- We can see the blue polarization lifetime problem.



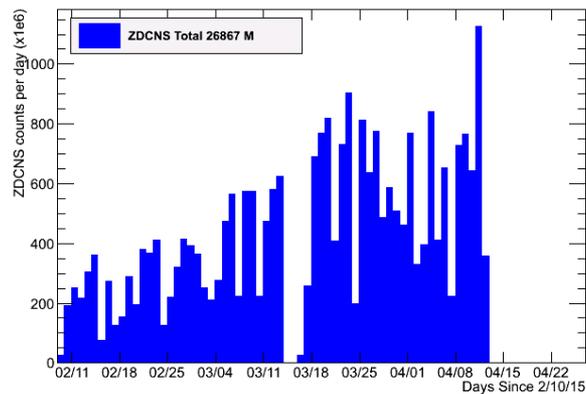
PHENIX Efficiency

Mon Apr 13 11:01:14 2015

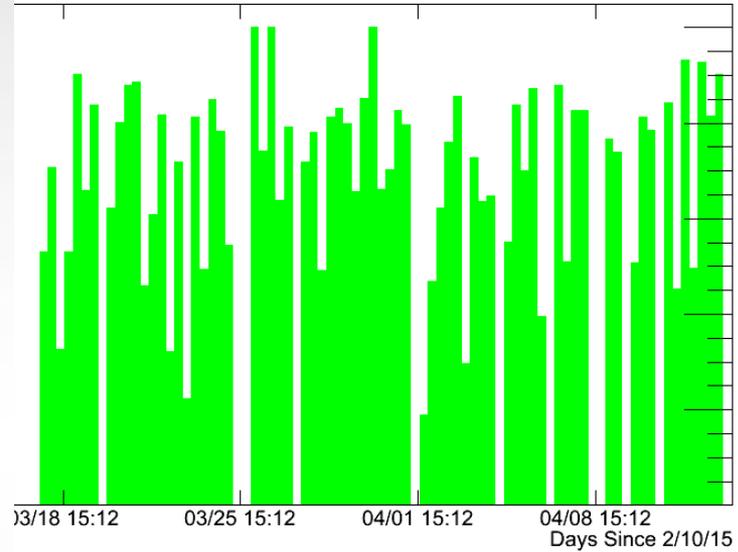


PHENIX ZDC/Day vs Day

Mon Apr 13 09:00:26 2015

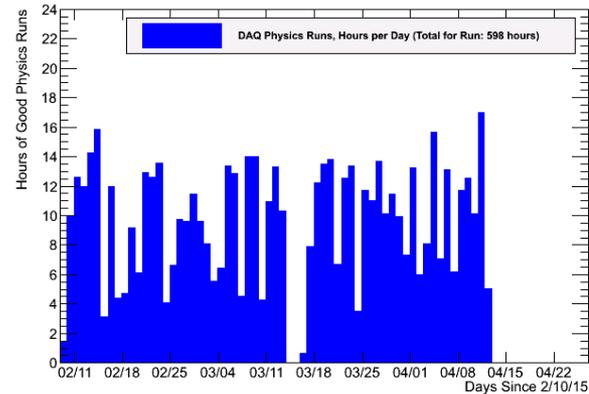


Mon Apr 13 11:01:40 2015



PHENIX Good Physics Run Hrs/Day vs Day

on Apr 13 09:00:26 2015

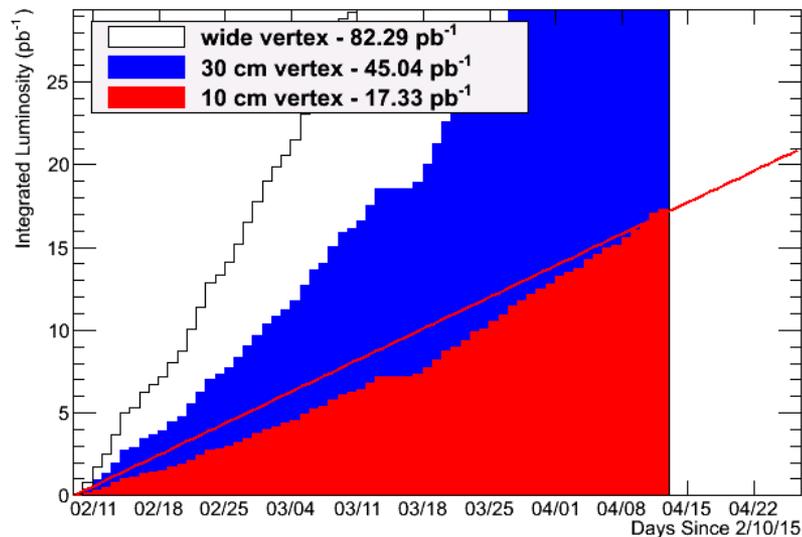


Luminosity Progress

- RHIC projections (<http://www.rhichome.bnl.gov/RHIC/Runs/RhicProjections.pdf>) gave Run-12 achieved delivered luminosity as **$9.3 \text{ pb}^{-1}/\text{week}$** and **$22 \text{ pb}^{-1}/\text{week}$** max expected in Run-15 (after 5 weeks running).
- Converting to our recorded luminosity: **$4.5 \text{ pb}^{-1}/\text{week}$** and **$10.1 \text{ pb}^{-1}/\text{week}$** (for the $|z| < 40\text{cm}$ program) and **$1.6 \text{ pb}^{-1}/\text{week}$** and **$3.85 \text{ pb}^{-1}/\text{week}$** (for the $|z| < 10\text{cm}$ program)

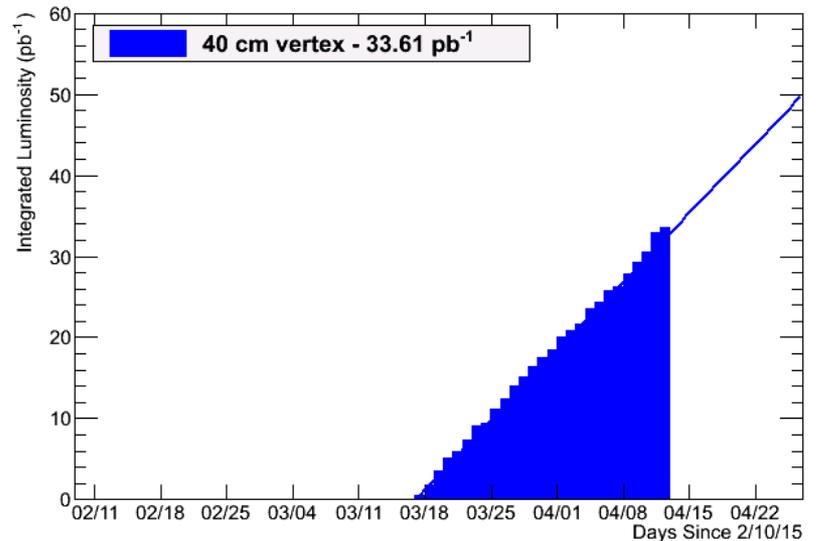
PHENIX Integr. Sampled Lumi vs Day

Mon Apr 13 09:00:25 2015



MPC-EX Integr. Sampled Lumi vs Day

Mon Apr 13 09:00:26 2015



FOM Progress

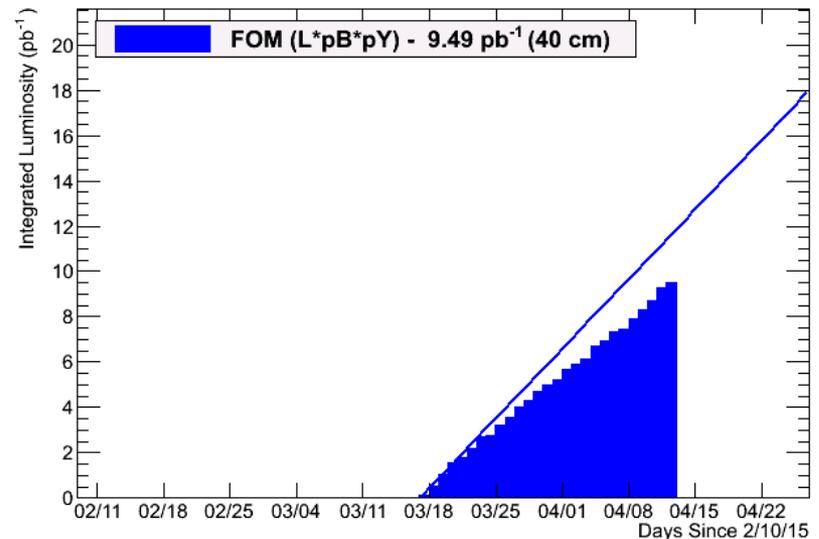
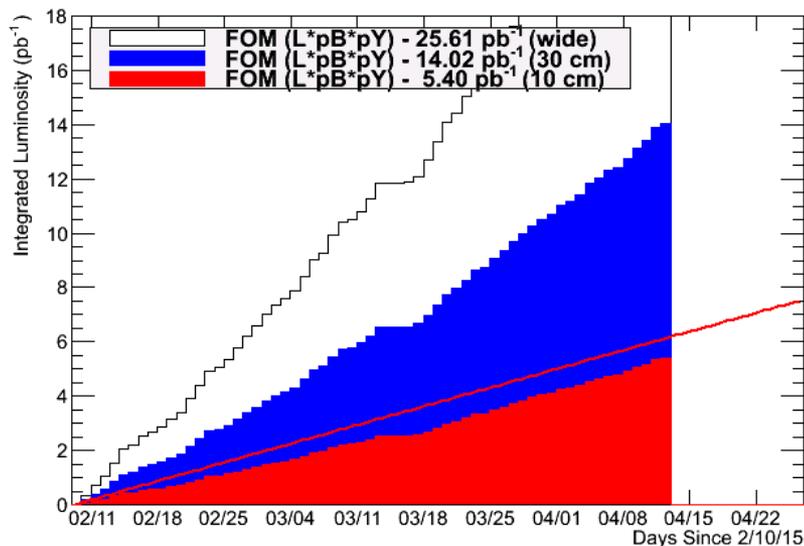
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PHENIX Integr. FOM vs Day

Mon Apr 13 09:00:26 201

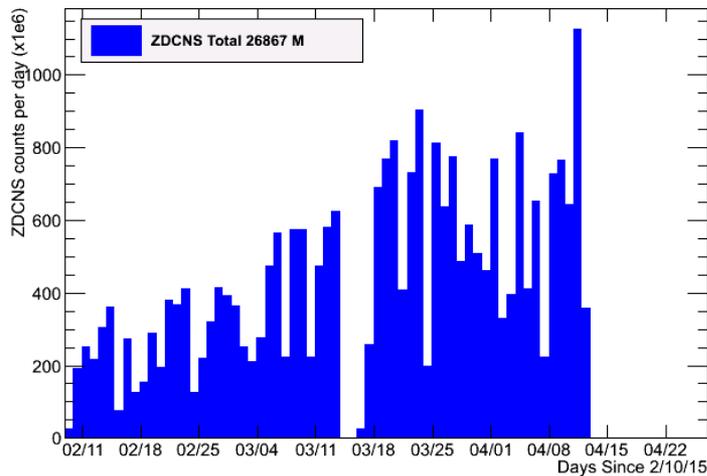
MPC-EX Integr. FOM vs Day

Mon Apr 13 09:00:26 2015

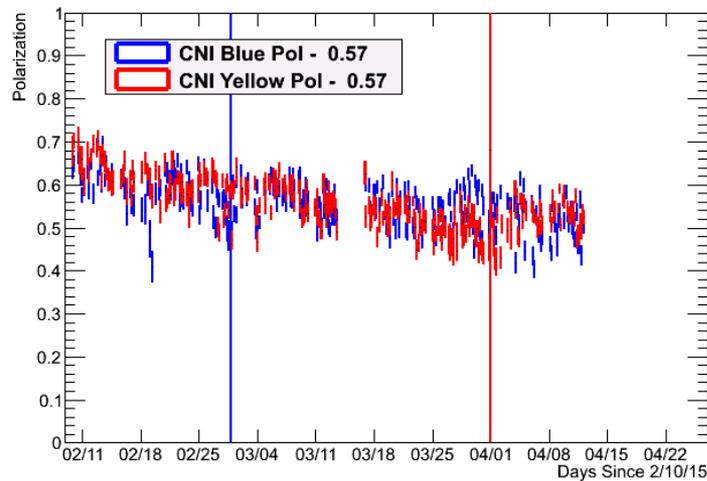


PHENIX FOM Progress

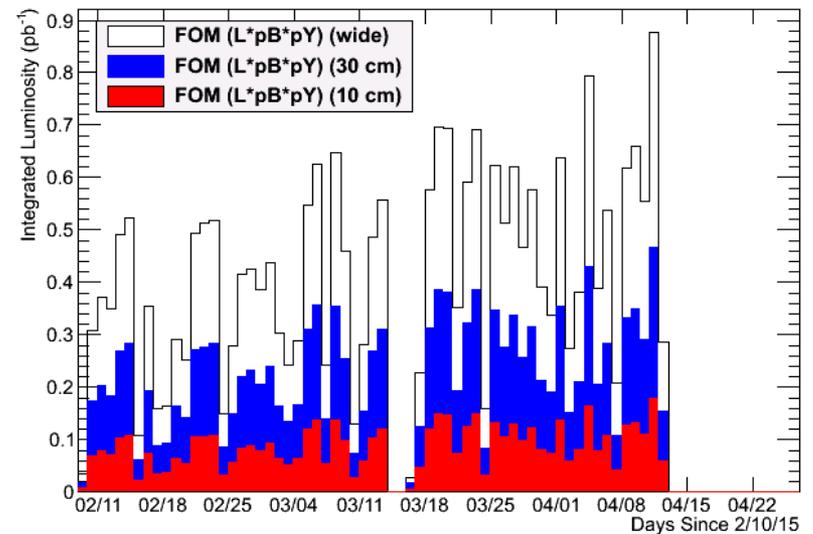
PHENIX ZDC/Day vs Day Mon Apr 13 09:00:26 2015



CNI Polarization vs Time Mon Apr 13 09:00:26 2015



PHENIX Integr. FOM/Day vs Day Mon Apr 13 09:00:26 2015



Summary

- Taking physics data for HF in Muon and Central arms.
- MPC-EX continues taking physics data and offline analysis ongoing.
- High Multiplicity trigger approaching 300M triggered events.



Backup



Progress Towards Physics Goals (p+p)

- Two physics programs:
 - Forward direct gamma physics with the MPC-EX
 - p+p @ 200 GeV with transverse polarization for 9 weeks
[Physics driven goal is **50 pb⁻¹** recorded within $|z| < 40$ cm and $\langle P \rangle = 60\%$]
 - Heavy Flavor physics using the F/VTX
 - p+p @ 200 GeV with transverse polarization for 9 weeks
[Physics driven goal is **21 pb⁻¹** recorded within $|z| < 10$ cm and $\langle P \rangle = 60\%$]
- In our BUP,
<https://indico.bnl.gov/getFile.py/access?resId=0&materialId=0&confId=764>) we state that we assume PHENIX uptime 70%, fraction of events within +/- 10 cm (25%) and +/- 40 cm (70%).

