

PHENIX Run16 status

time meeting 05/17/2016

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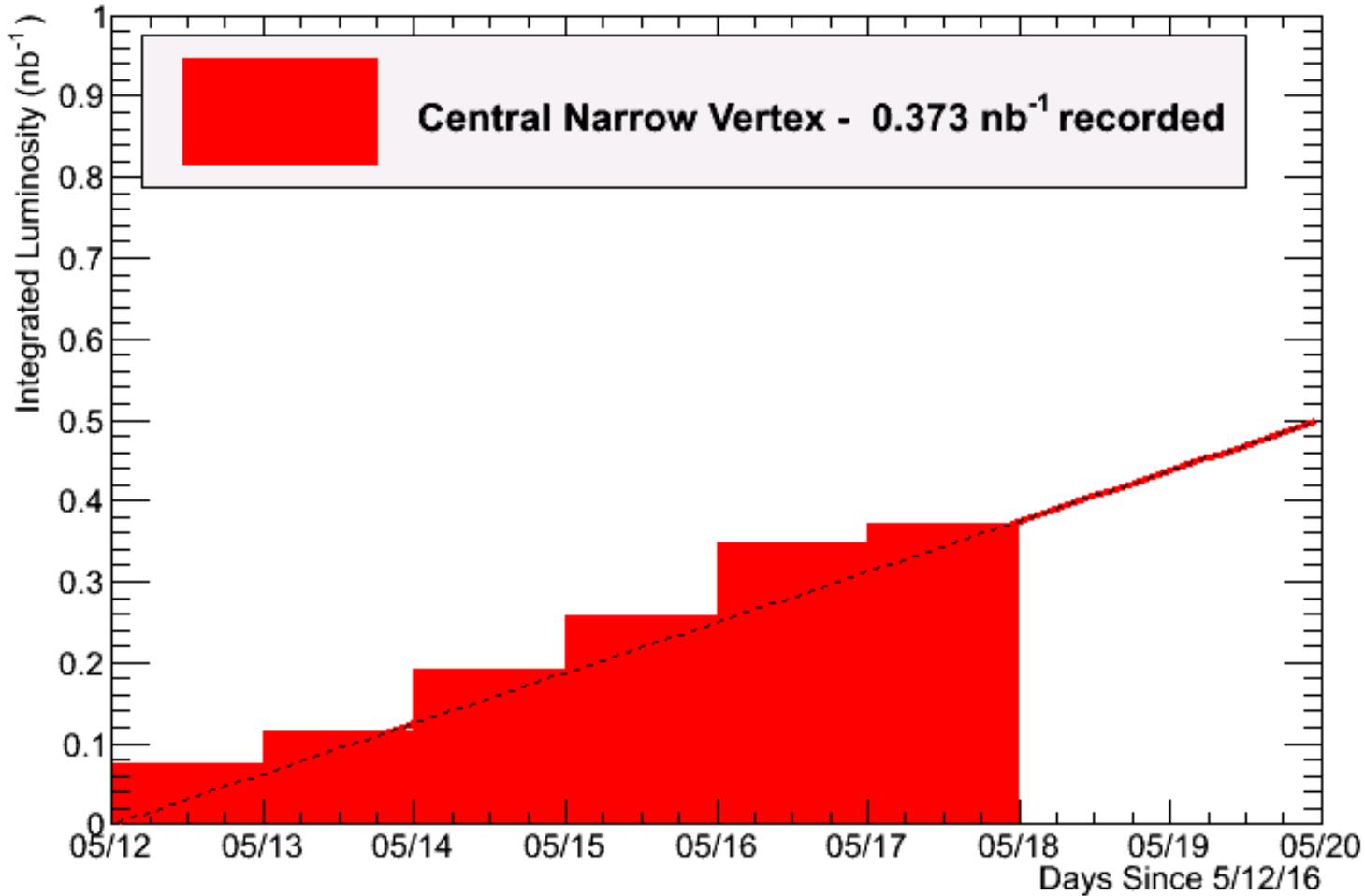
d-Au 200: 2 goals

- measuring flow, with **minimum bias recorded collisions** BBC « narrowvertex » ($|Z_v| < 10\text{cm}$) 5% most central events (1 GeV) and
- measuring direct photons $p_T > 3\text{GeV}/c$, corresponding to a **(total number of collisions)** integrated live luminosity of 77/nb (raw: 110/nb)

One is DAQrate limited,
the second is delivered luminosity limited

PHENIX Integr. Lumi. vs Day

Tue May 17 09:00:10 :

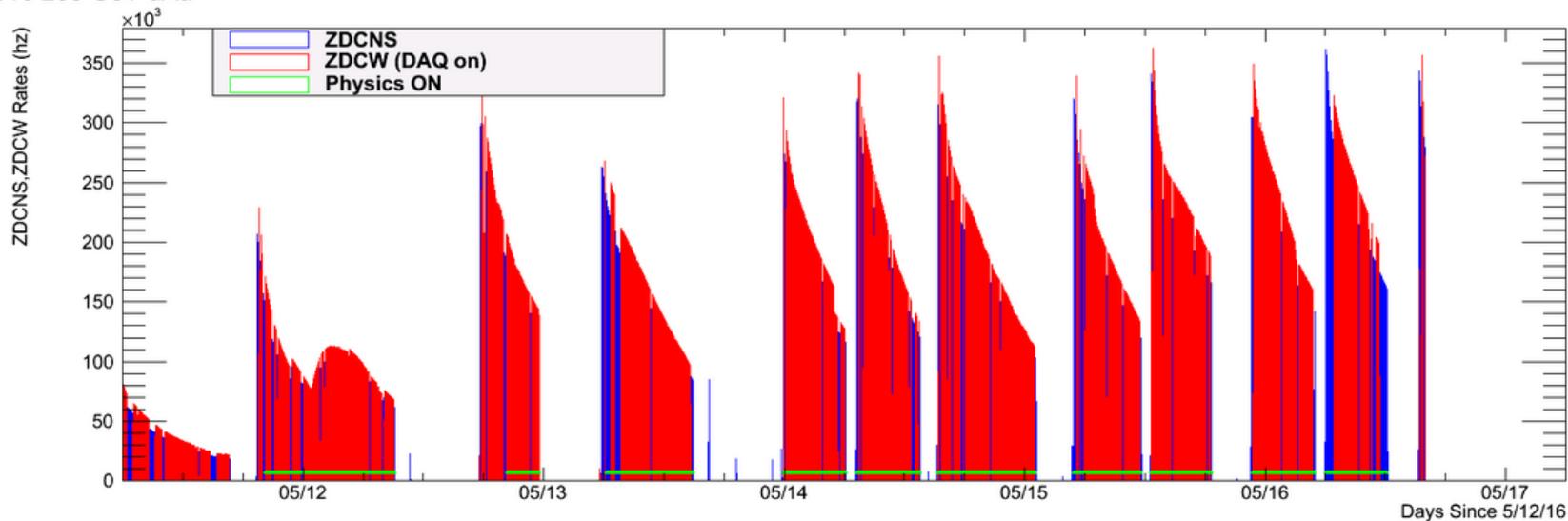


Min bias
narrow
central: on
tracks

Thanks to a good delivery

2016 200 GeV dAu

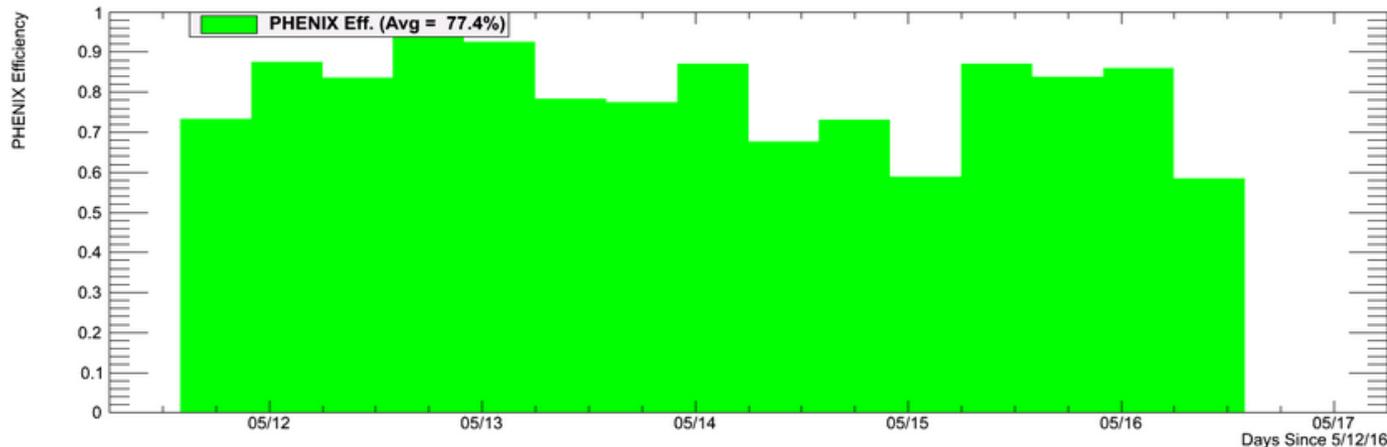
Tue May 17 10



(optimization of store length, and intensity)

PHENIX Efficiency vs Day

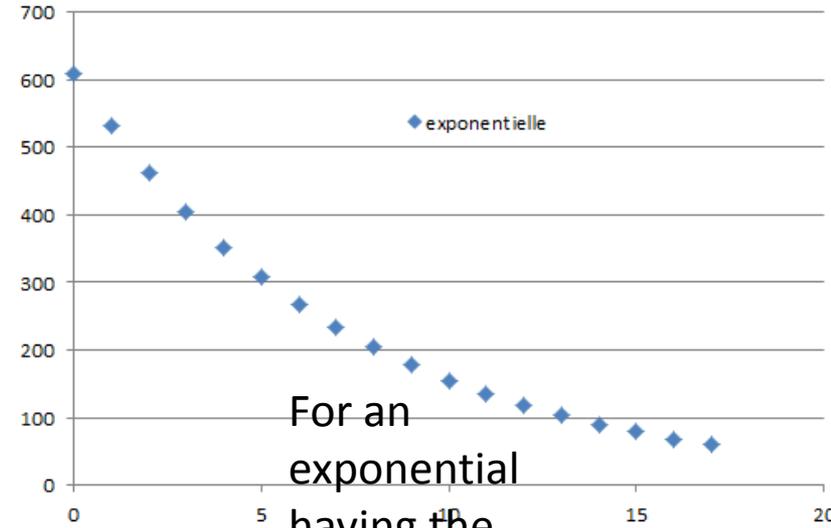
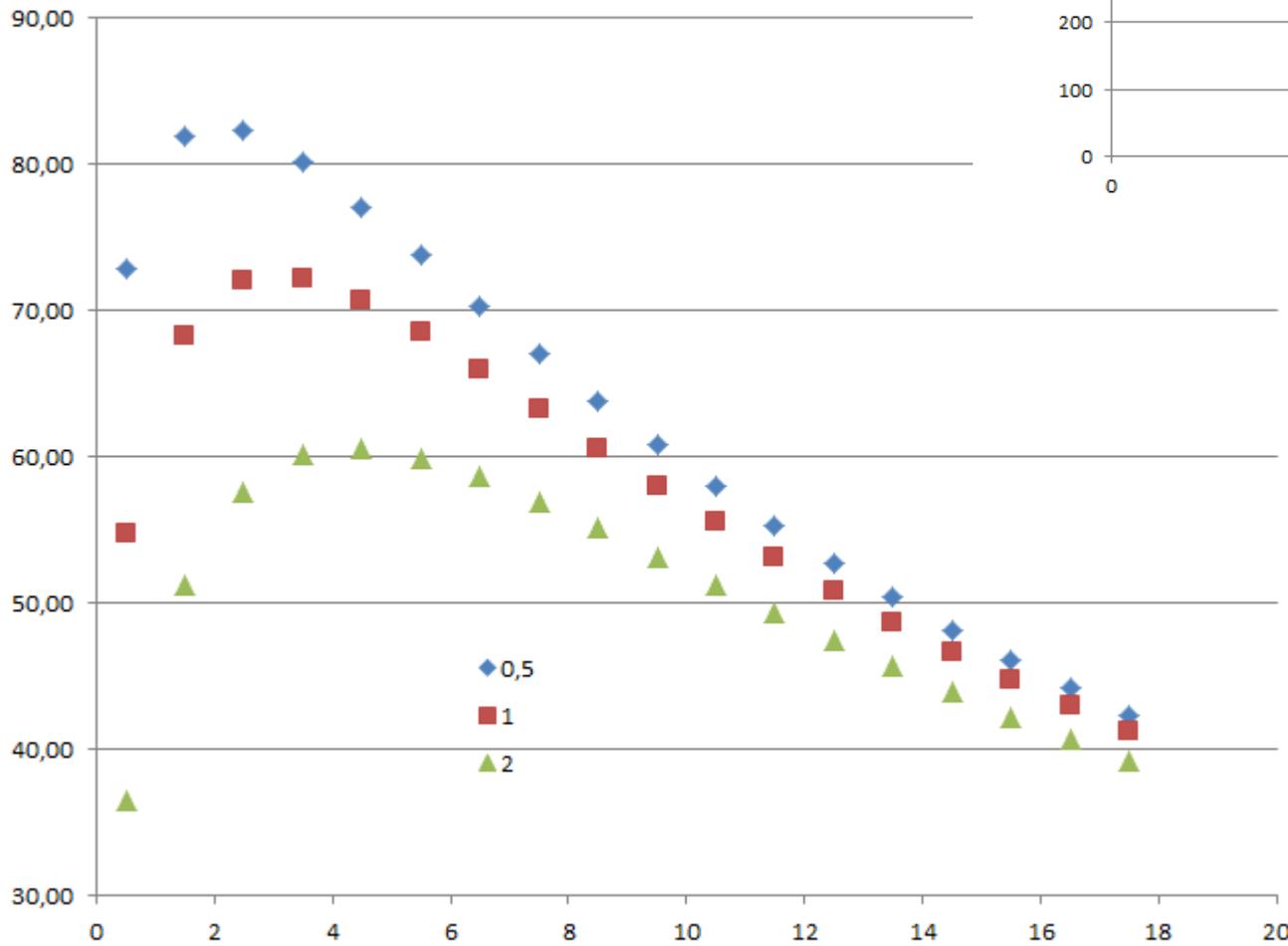
Tue May 17 10:



And for PHENIX
an average good
uptime of DAQ

With some
accidents

$(nb * week)^{-1}$



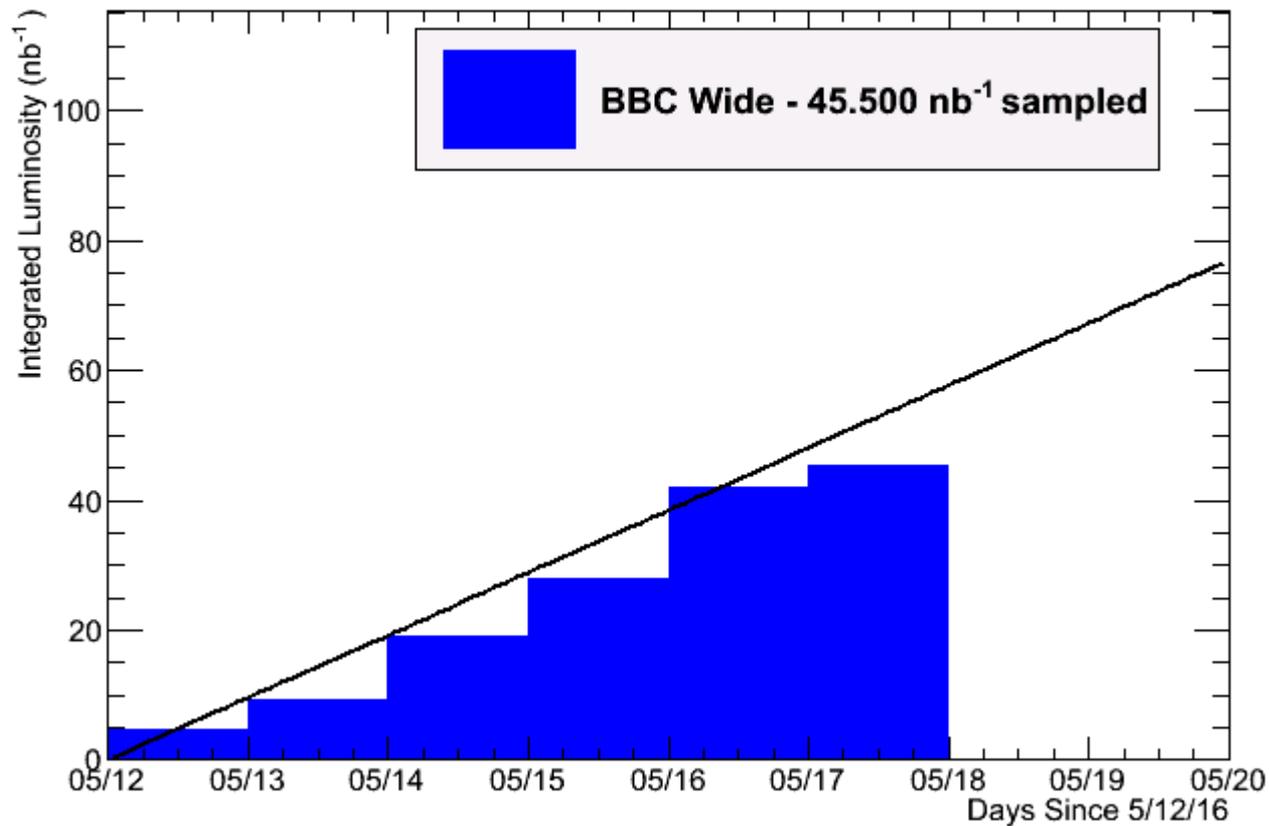
For an exponential having the characteristics of the last store 600KHz->250 after 7 hours

The time of change of store has a big effect on the week luminosity, and **6 hours store** is acceptable even for short change durations, and optimum for 2 hours

The delivered luminosity is below the target ?

PHENIX Integr. Sampled Lumi. vs Day

Tue May 17 09:00:11

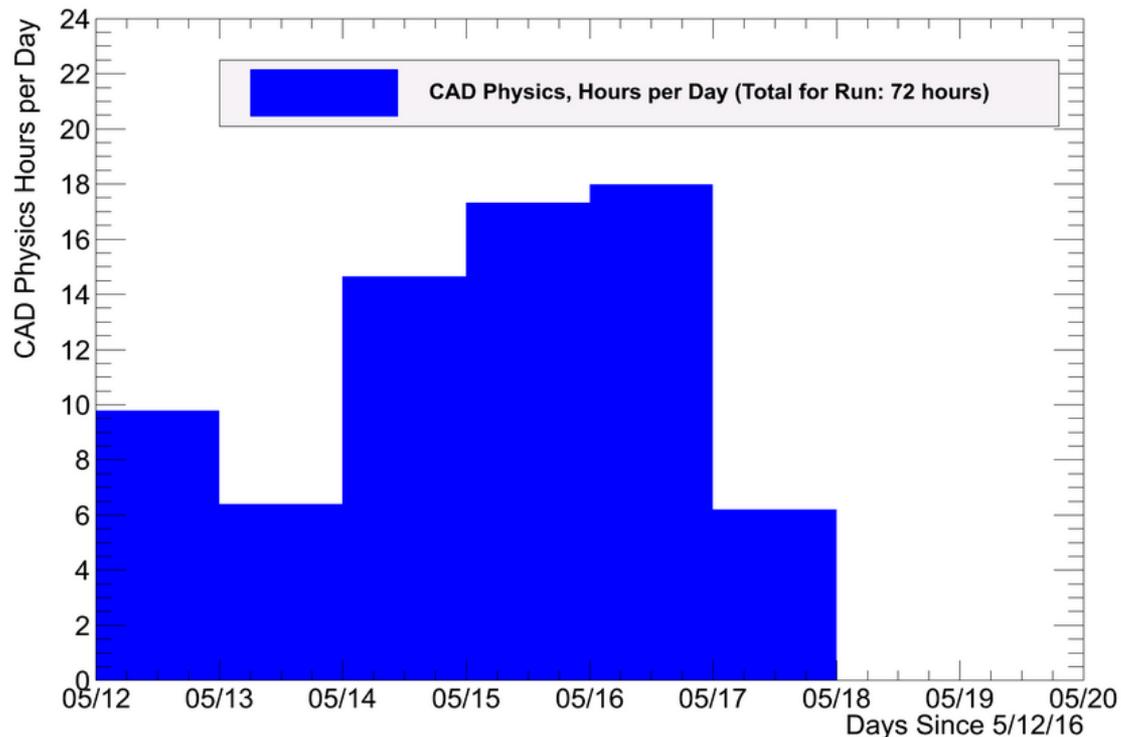


A bit surprising since the intensity in the rings (2.1 and $140 \cdot 10^9$) is higher than the corresponding expectations .. We have a factor(s) somewhere

The goal is in **sampled** luminosity ,
77nb-1 (110nb delivered)

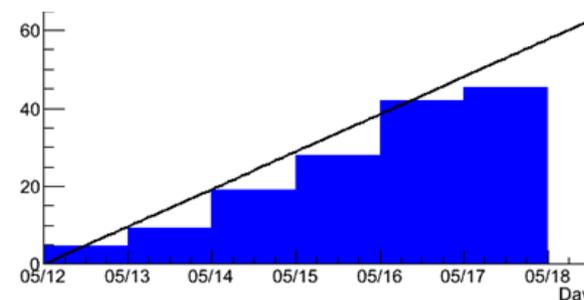
CAD Physics Hrs/Day vs Day

Tue May 17 10:00:15 2016

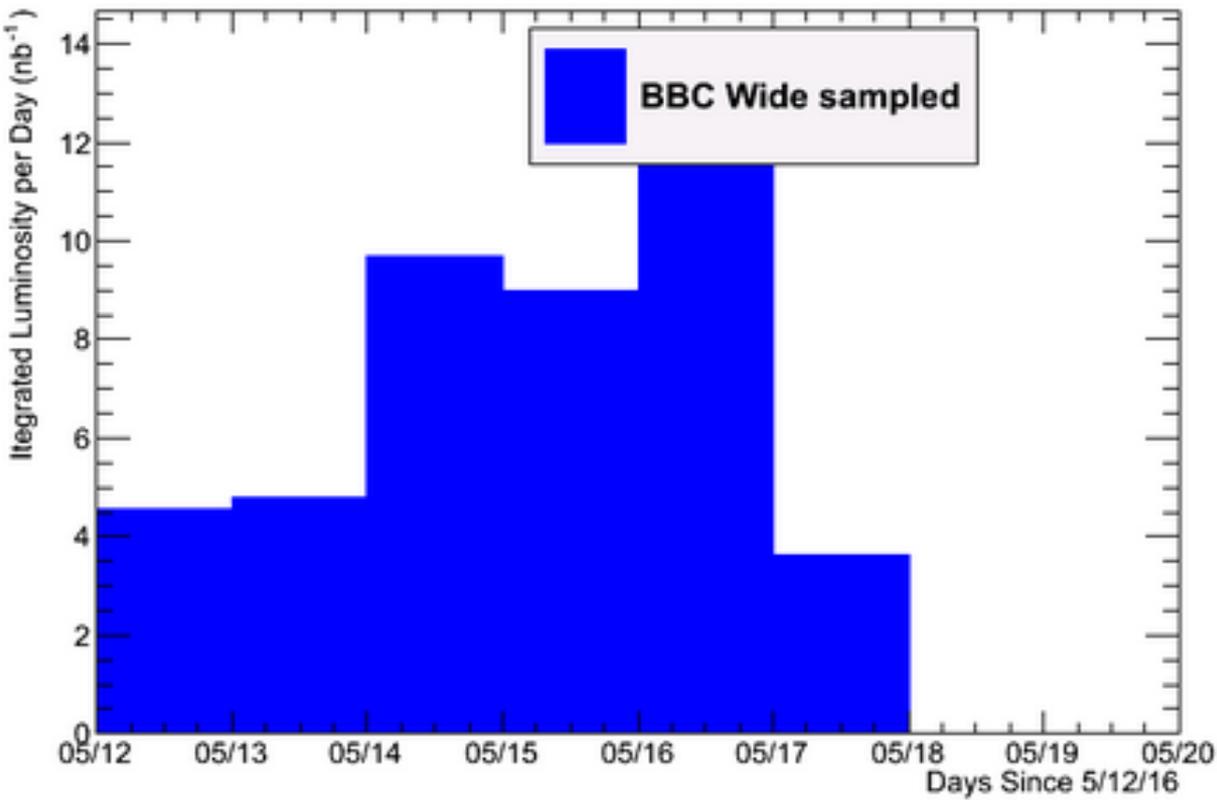


Going closer to the goal
 thank to intensity,
uptime of beam and
 DAQ, optimization of
 store length (a change of
 paradigm compared to
 AuAu),

Every 10% counts !



PHENIX Integr. Sampled Lumi/Day vs Day 1e May 17 12:00:10



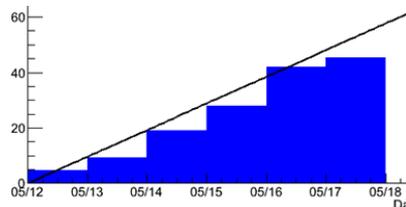
During physics on declared in store:

Phenix BBC sampled luminosity
45.6 nb⁻¹ (60%)

Run lifetime (0.9)

Fraction DAQ uptime (0.8)

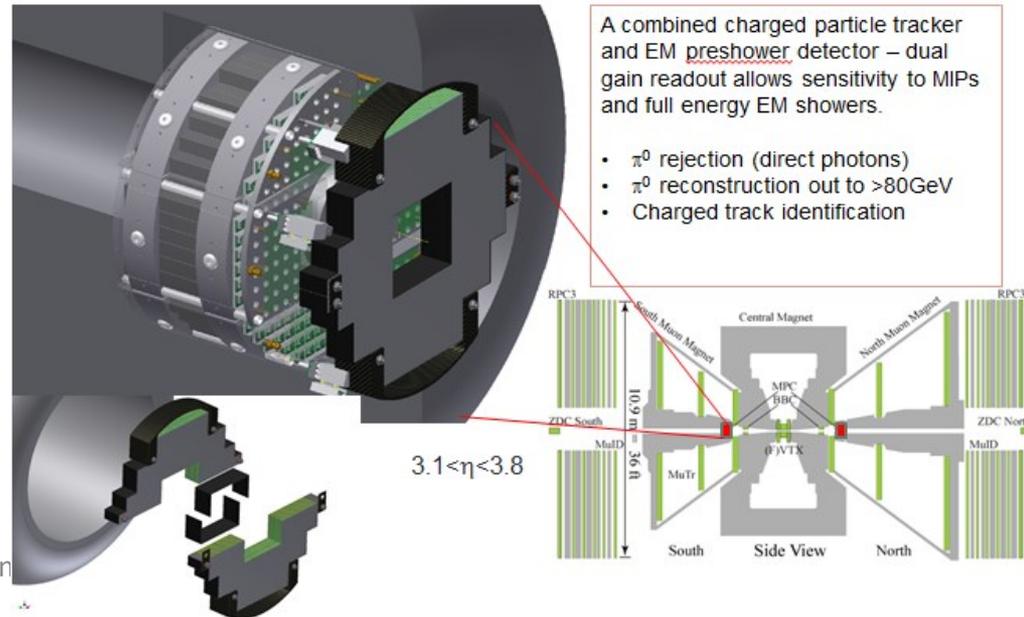
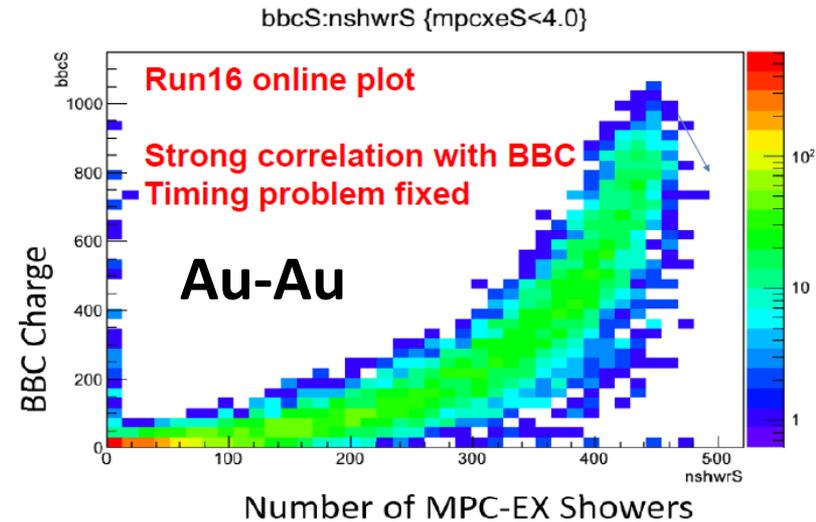
BBC >50cm (0.9)
70 nb⁻¹ (to be compared to 110)



We are below the goals, still need some extra push (the end on Friday 8AM could help)

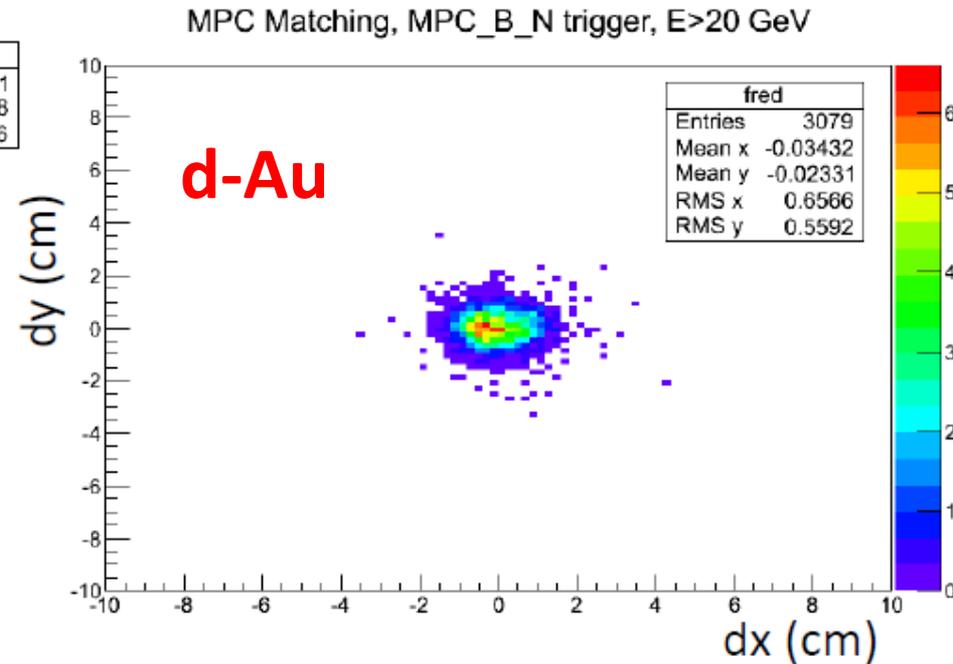
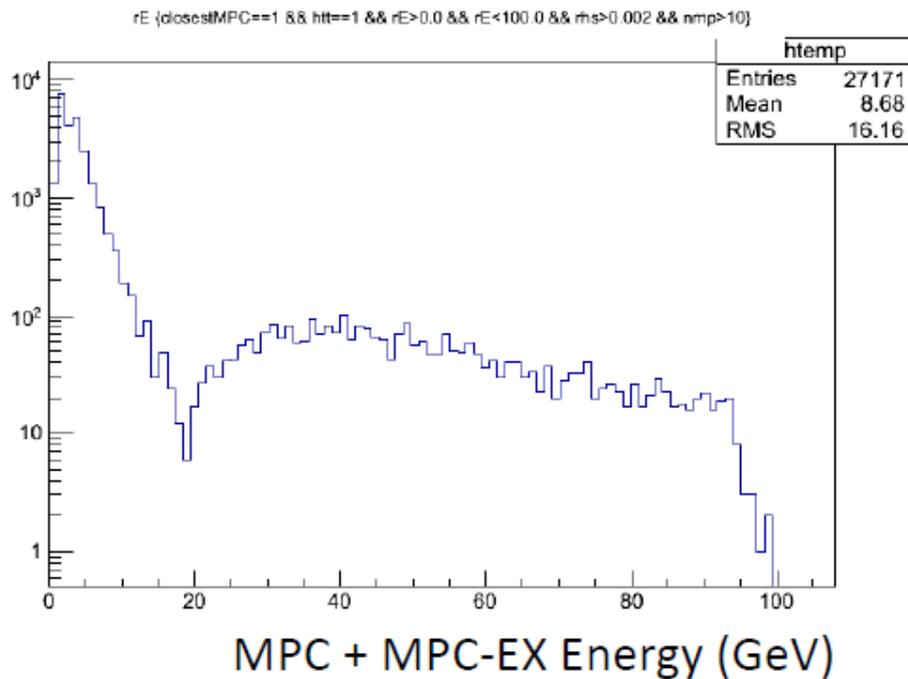
MPC-EX

- MPC EX timed in:
 - Timed in AuAu, very clear correlations in sum of signals
 - in dAu, Sum of signals not so effective to display correlations
- > use another way



Good timing : clear correlation MPC-MPC-EX

Physics runs, MPC_B_N trigger.



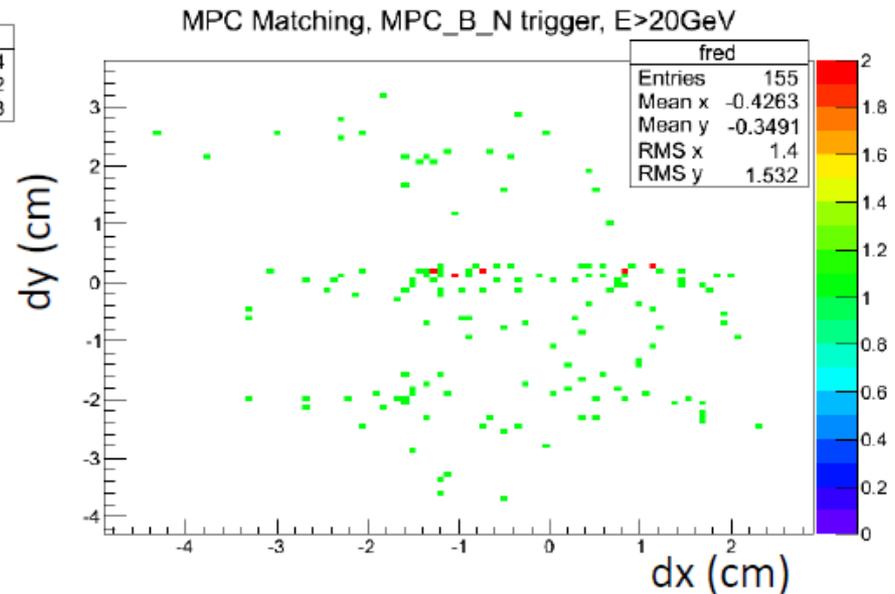
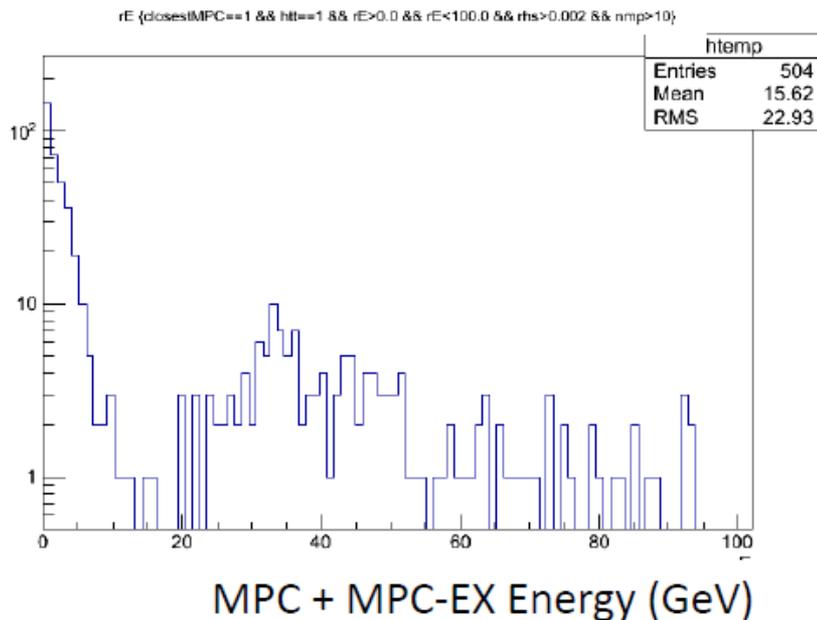
- MPC-EX Shower Cuts:
 - MPC-EX shower RMS (Hough space) > 0.002
 - Number of minipads in shower > 10
- Tight correlation for high energy showers (fire MPC_B_N trigger)

Wrong timing: no correlation

MPC-EX delayed

Special Run 454806, L1Delay+1 (off time), MPC_B_N trigger.

d-Au



- MPC-EX Shower Cuts:
 - MPC-EX shower RMS (Hough space) > 0.002
 - Number of minipads in shower > 10
- Very wide correlation for high energy showers (fire MPC_B_N trigger)

Summary: **it goes very well**

but slightly below one goal

- Very good schedule of the preparation phase
- High intensity in rings, optimized store length,
- Goal 1 in tracks
- Goal 2 slightly below, should need an increase of the *sampled* luminosity
- -> we need to **continue this way or higher**
- End on Friday 8AM should help
- **MPC-EX : verified operational**, timed in with other subdetectors
- Still chasing several 10% in the relationship between intensity in rings, total week expected luminosity and phenix sampled luminosity.