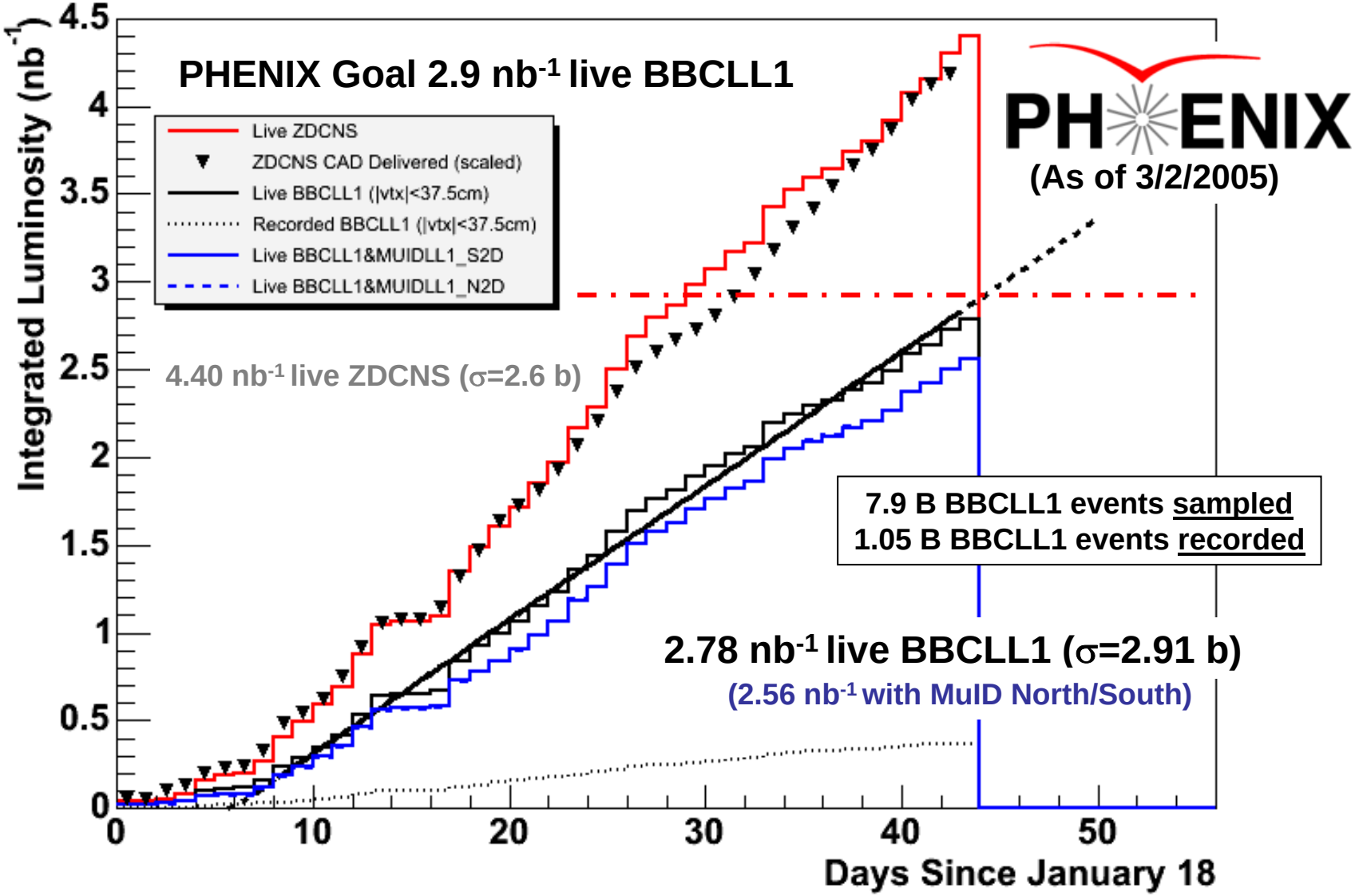
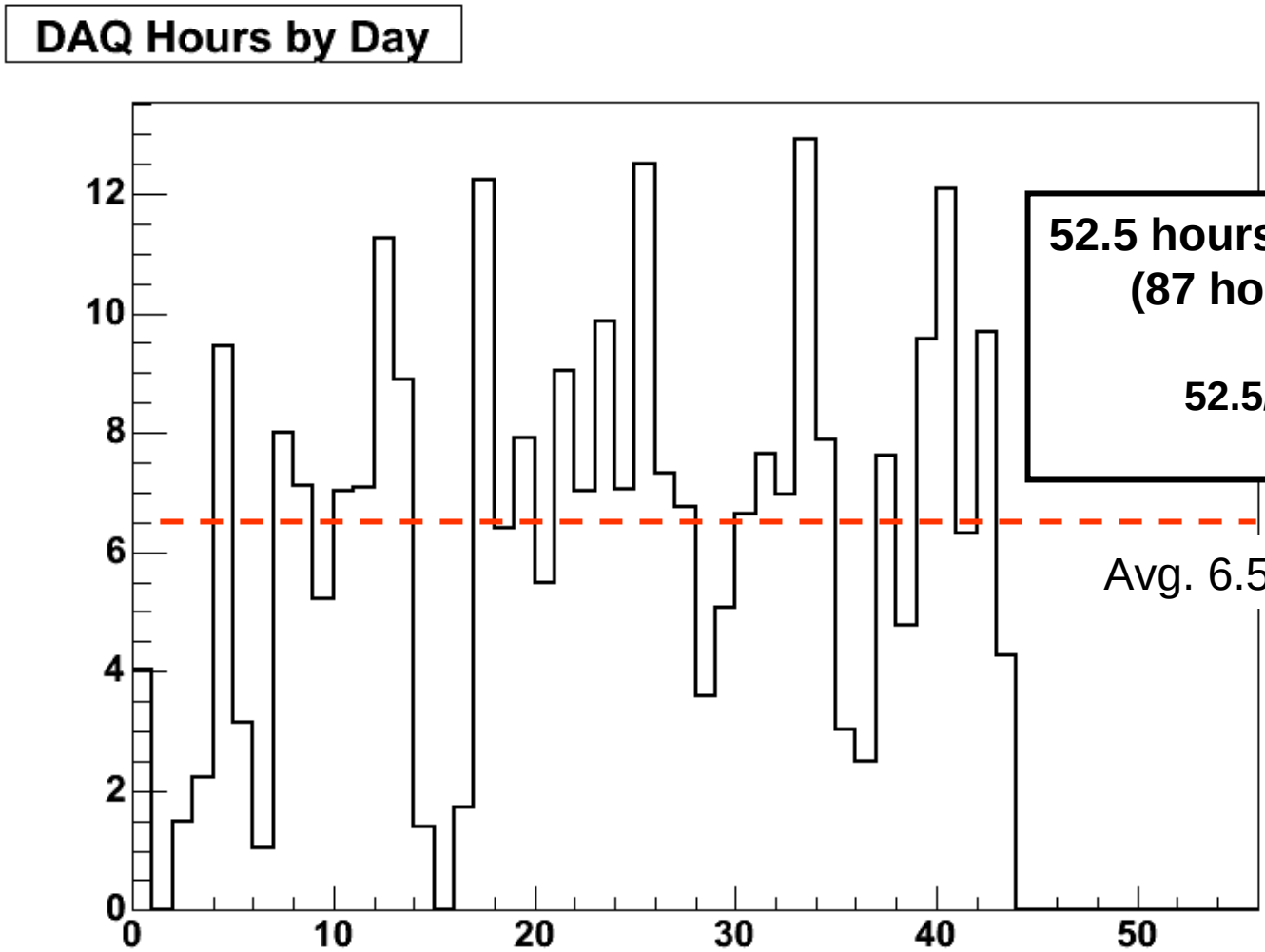
200GeV CuCu Integrated Luminosity



PHENIX DAQ Hours



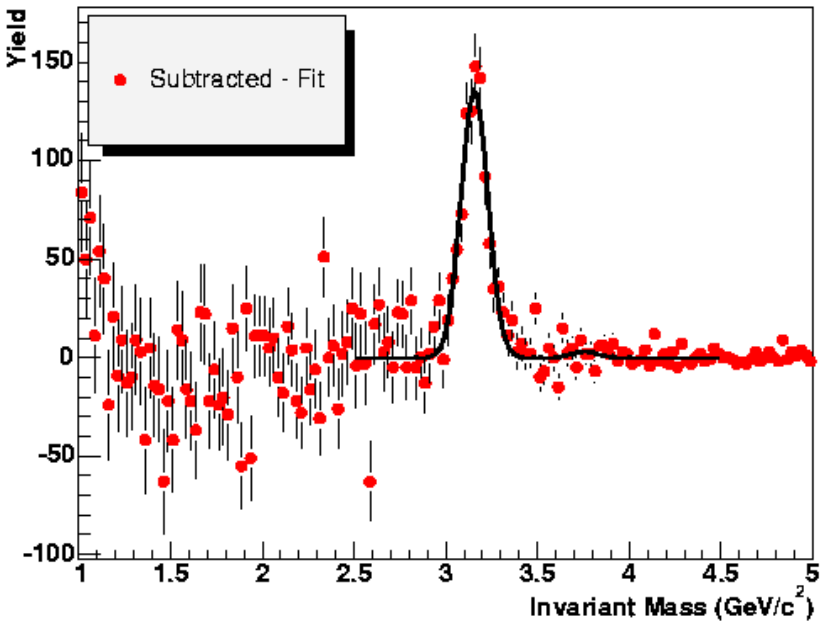
52.5 hours in the previous week
(87 hours RHIC physics)

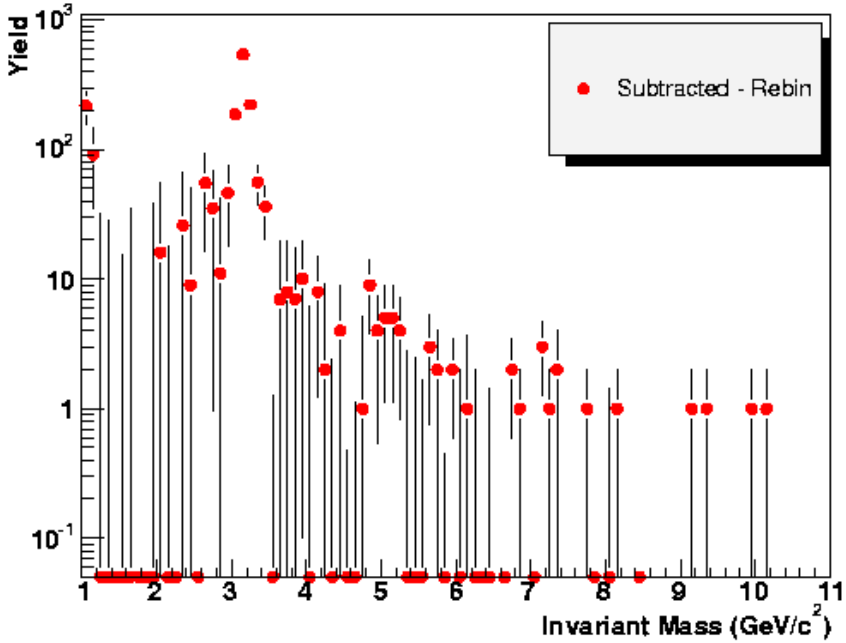
52.5/(87-23*0.5) = 0.69

Avg. 6.5 hours/day

J/Ψ→e^+e^- in CuCu 200 GeV

- J/Ψ in central arm data:





991+/-55 J/Ψ

22+/-18 Ψ' (2%)

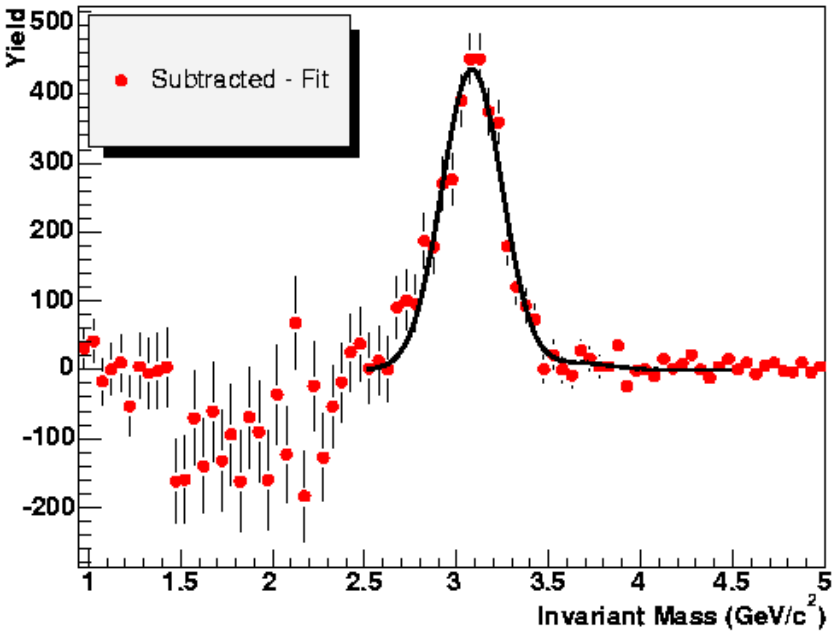
Handful of counts in upsilon mass region

(~2.4 nb^{-1} processed through LVL2 and reconstruction)

J/Ψ→$\mu^+\mu^-$ in CuCu 200 GeV

- J/Ψ in LVL2 filtered events:

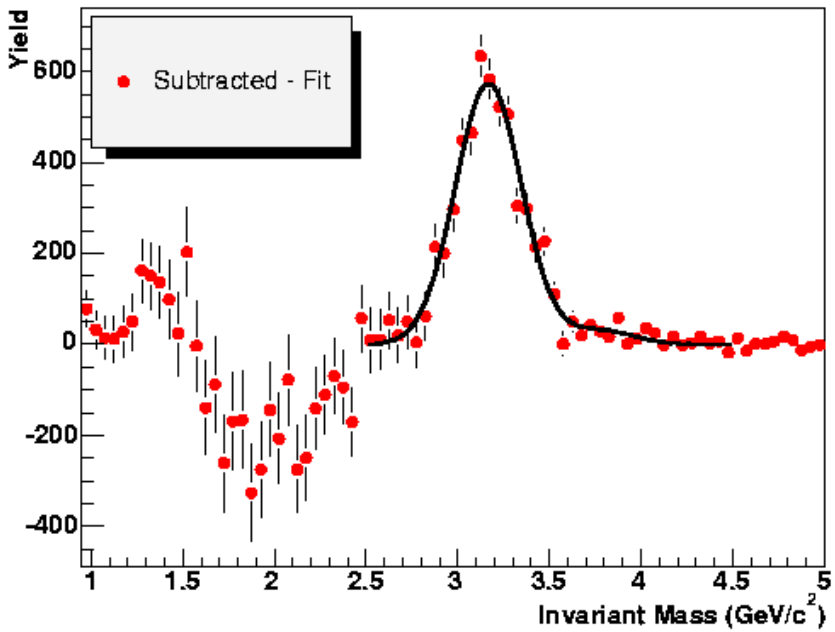
North Muon Arm



3571+/-145 J/Ψ,

81+/-59 Ψ' (2%)

South Muon Arm



5199+/-178 J/Ψ,

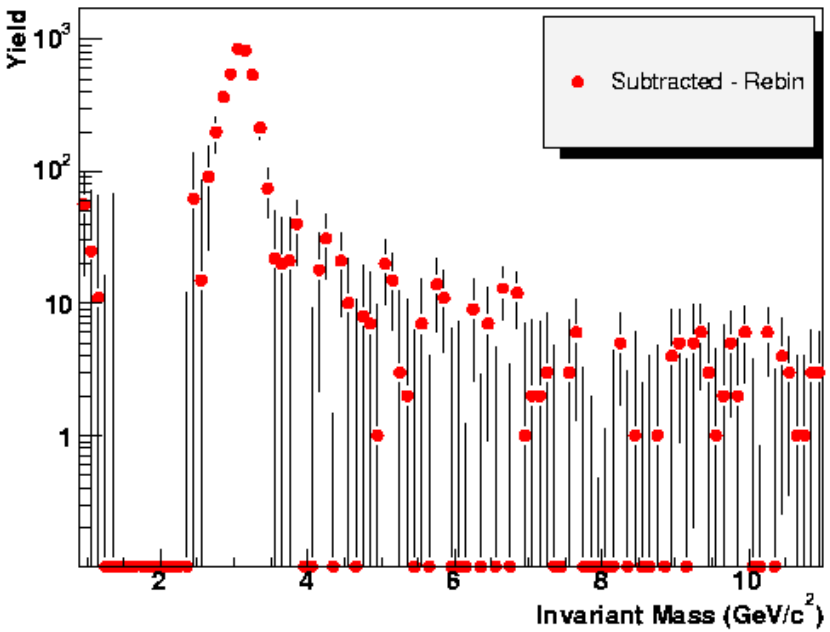
283+/-74 Ψ' (5%)

(~2.2 nb^{-1} processed through LVL2 and reconstruction)

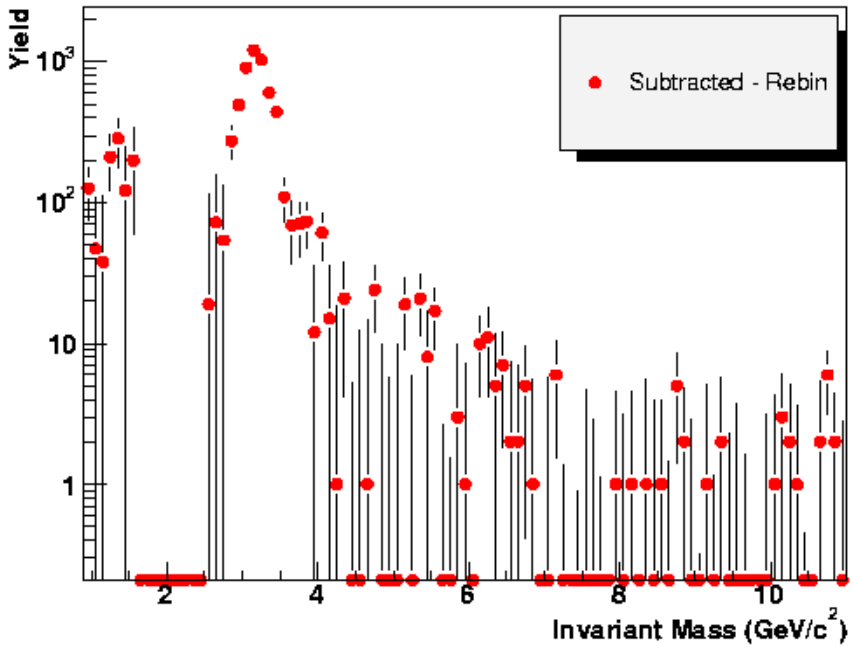
J/Ψ→$\mu^+\mu^-$ in CuCu 200 GeV

- Counts in upsilon mass region, background
  - Cuts optimized for J/Ψ, needs more work

North Muon Arm



South Muon Arm



62.4 GeV CuCu Goals

- PHENIX goals based on comparable “pp equivalent” luminosity:

$$\int Ldt\Big|_{pp\ \text{equivalent}} = A \times B \int Ldt\Big|_{\text{A+B}}$$

  - AuAu pp equivalent luminosity at 62 GeV was 0.36 pb^{-1}

  – Assuming <u>current</u> CuCu 200 GeV luminosity (~450 μb^{-1}/week):
    - Drop a factor of ~10 for lower energy (45.0 μb^{-1}/week)
    - “pp equivalent” = 63 x 63 x 45.0 = 0.179 pb^{-1} /week
    - Need roughly two weeks of running plus three days setup time

  – PHENIX Goal is <u>91 μb^{-1} CuCu at 62.4 GeV</u>
    - 0.36 pb^{-1}/(63 x 63) = 90.7 μb^{-1}