PHOBOS
Run-5 Wrap-up &
Request for 400+GeV p+p

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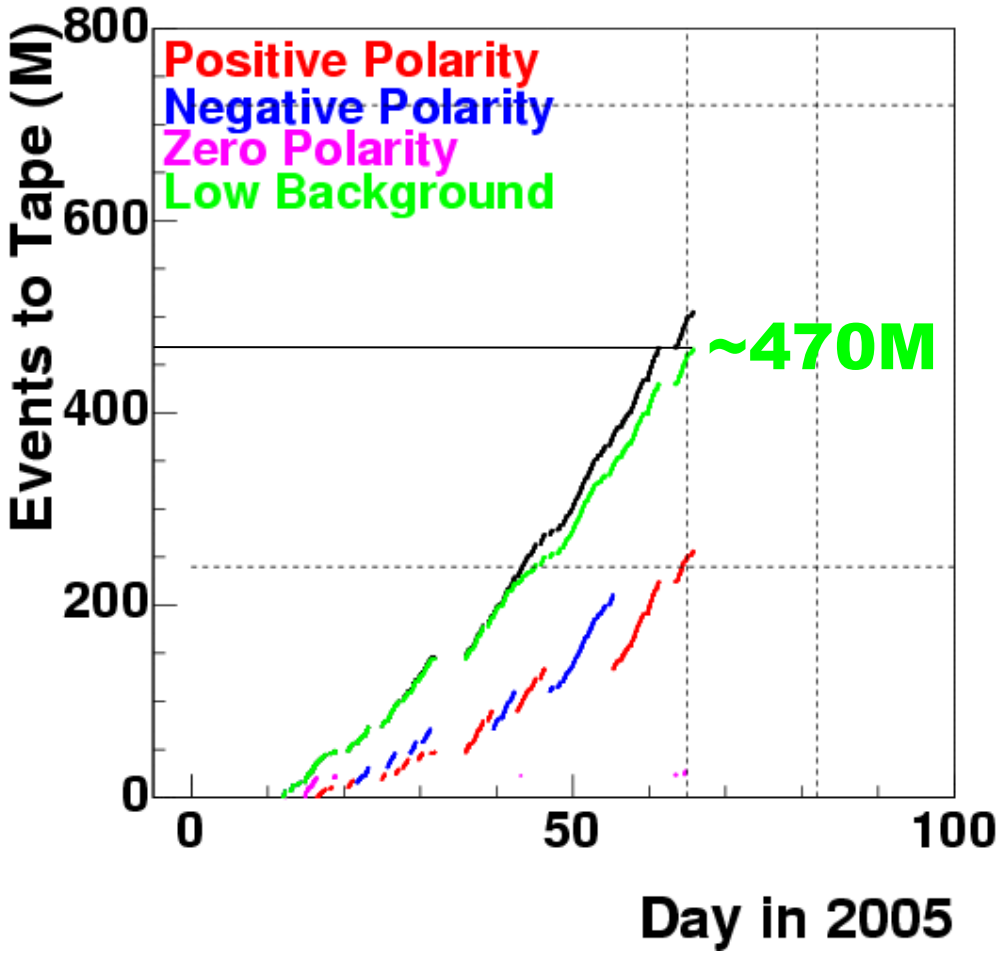
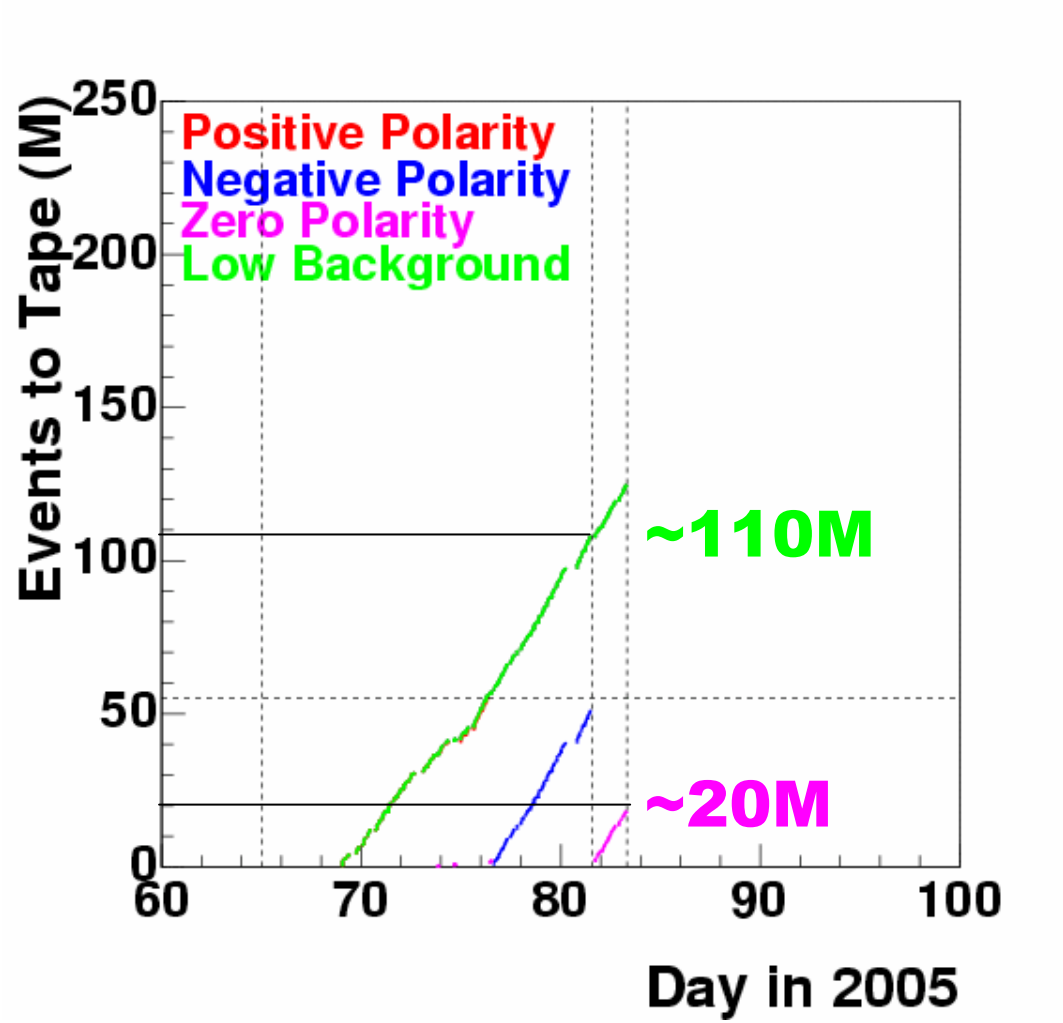
PHOBOS Cu+Cu 200 GeV



PHOBOS Cu+Cu 62.4 & 22.5 GeV



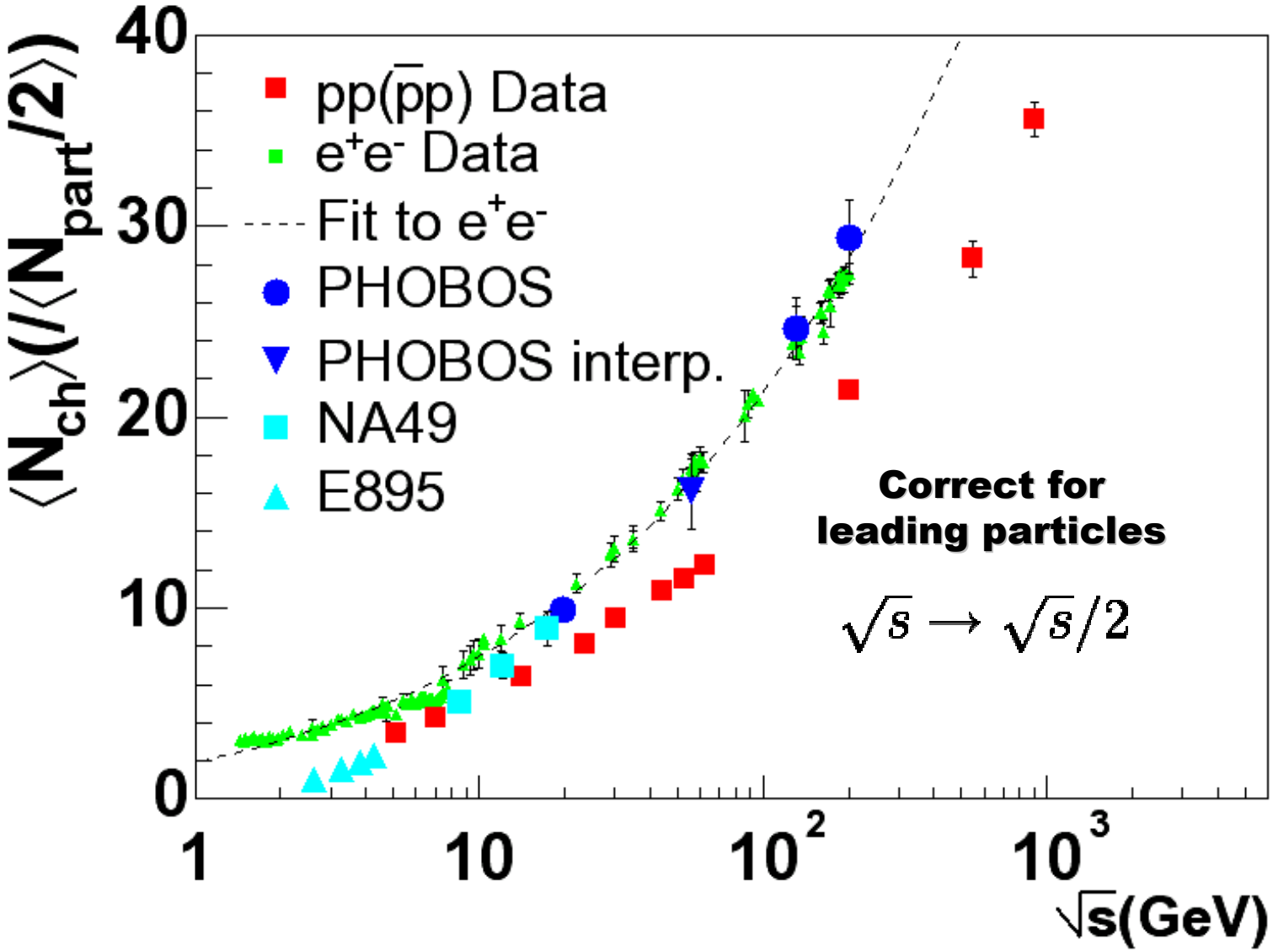
Thank You

And we owe you guys a bottle of scotch & some wine…

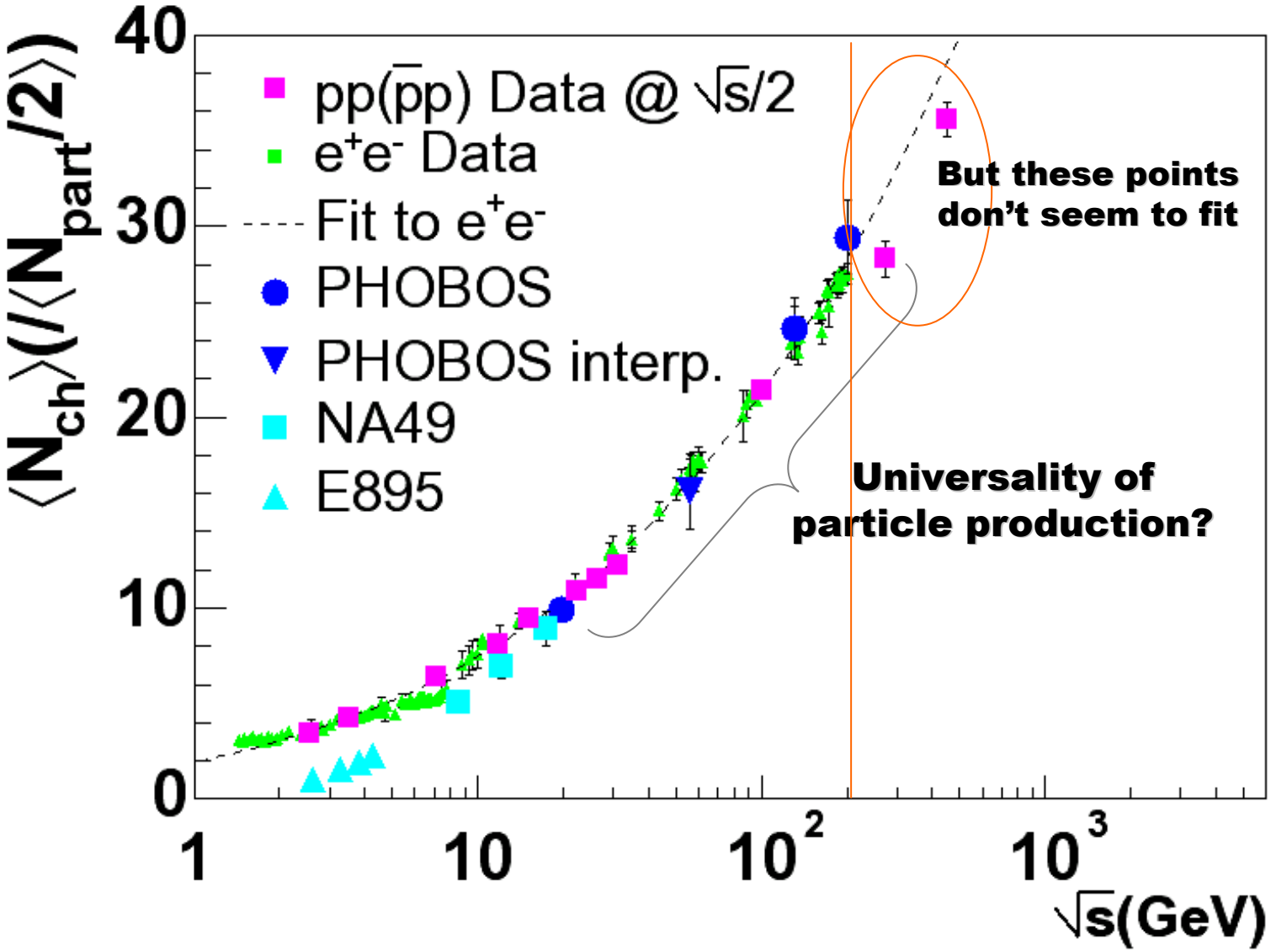
PAC Recommendations 9/10/04

A brief polarized pp run at higher energy $s^{½} = 400\text{-}500$ GeV would be desirable, because it would allow a first practical exploration of the challenges posed by the depolarizing resonances known to exist above 100 GeV beam energy. Once achieved, we recommend a brief (unpolarized) physics run of one or two days to make first measurements at the higher energy.

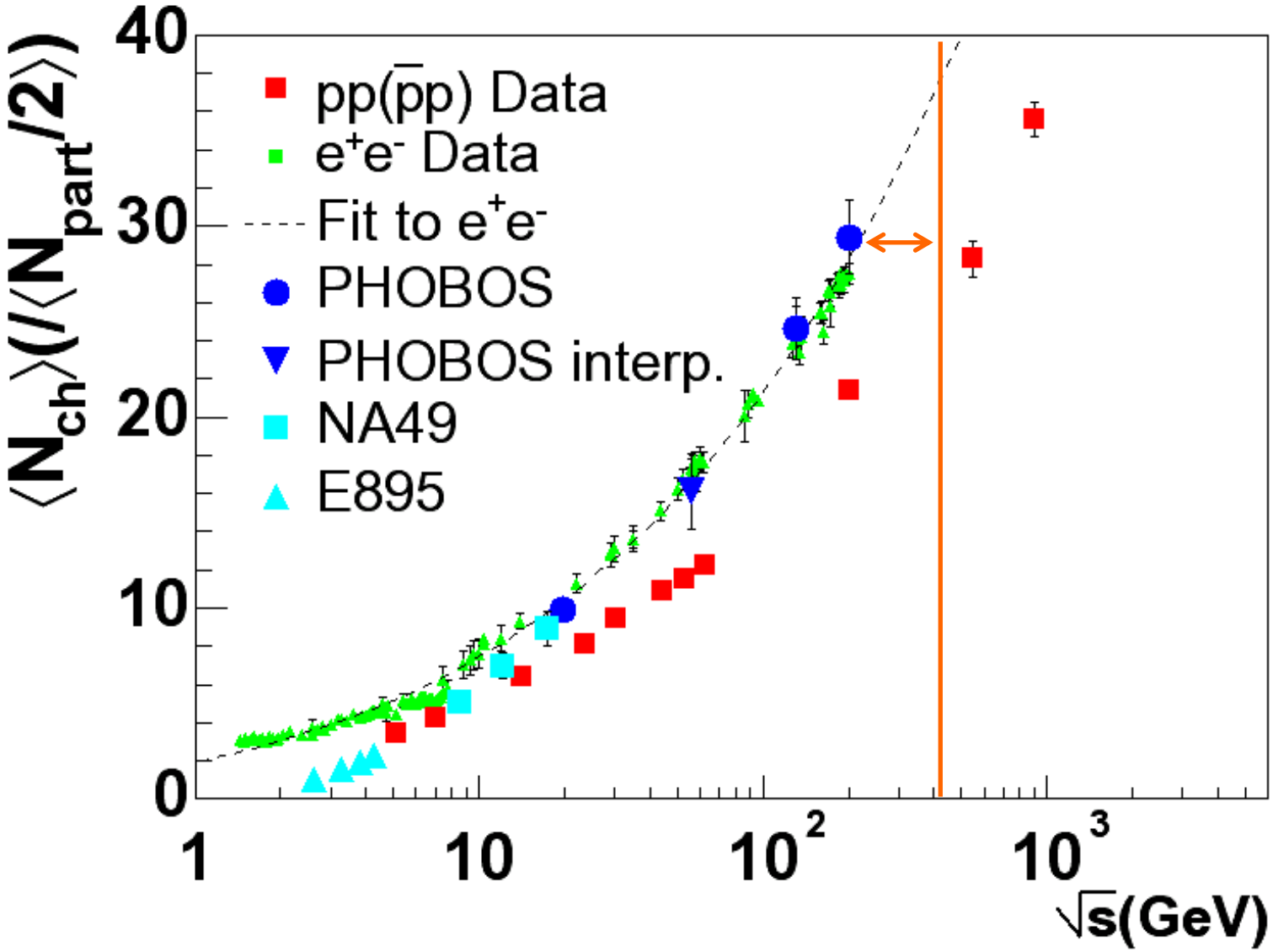
PHOBOS Request for 400+ GeV



PHOBOS Request for 400+ GeV



PHOBOS Request for 400+ GeV

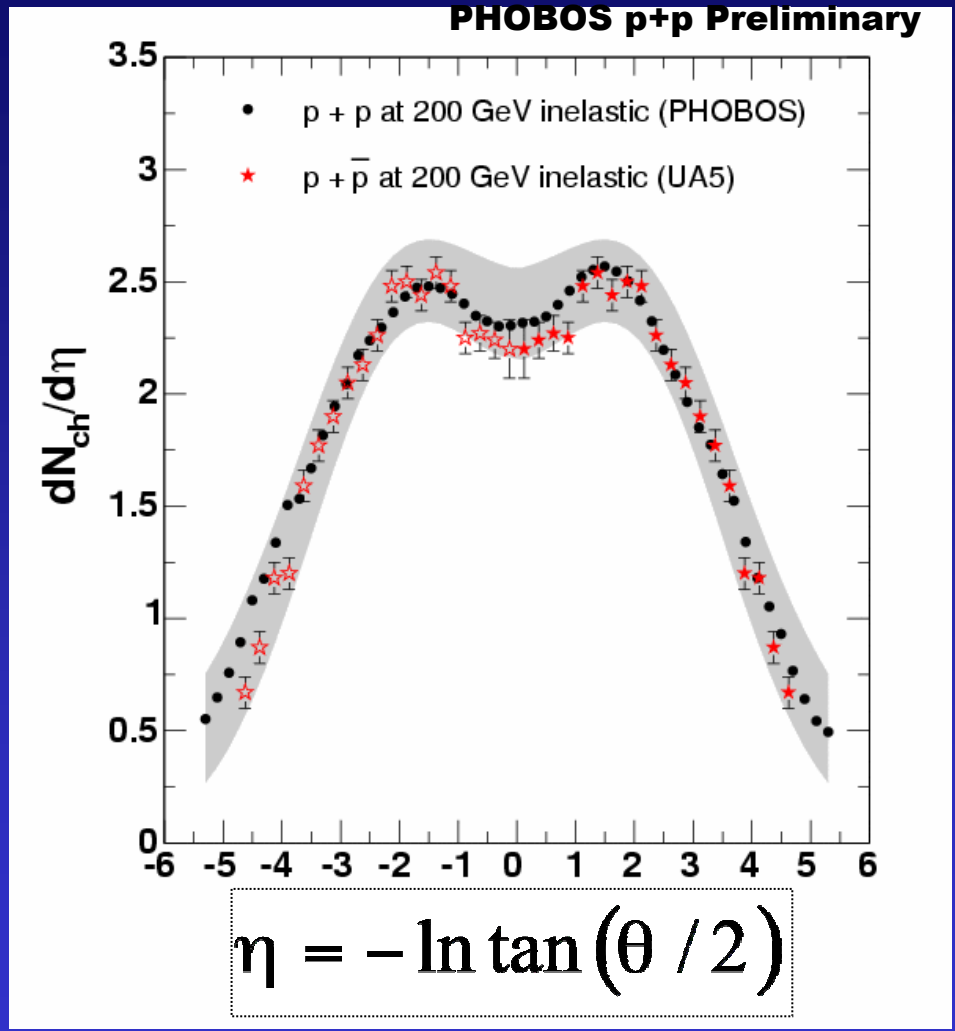


dN/d| in Au+Au

We have better statistics AND systematics than UA5 (only existing 4 measurements up to now)

UA5 had O(1000's) events at every energy

We have better coverage, statistics → systematics



Unintended Consequences

Believe it or not, this information is already eligible to add to Particle Data Book...

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.

Unintended Consequences

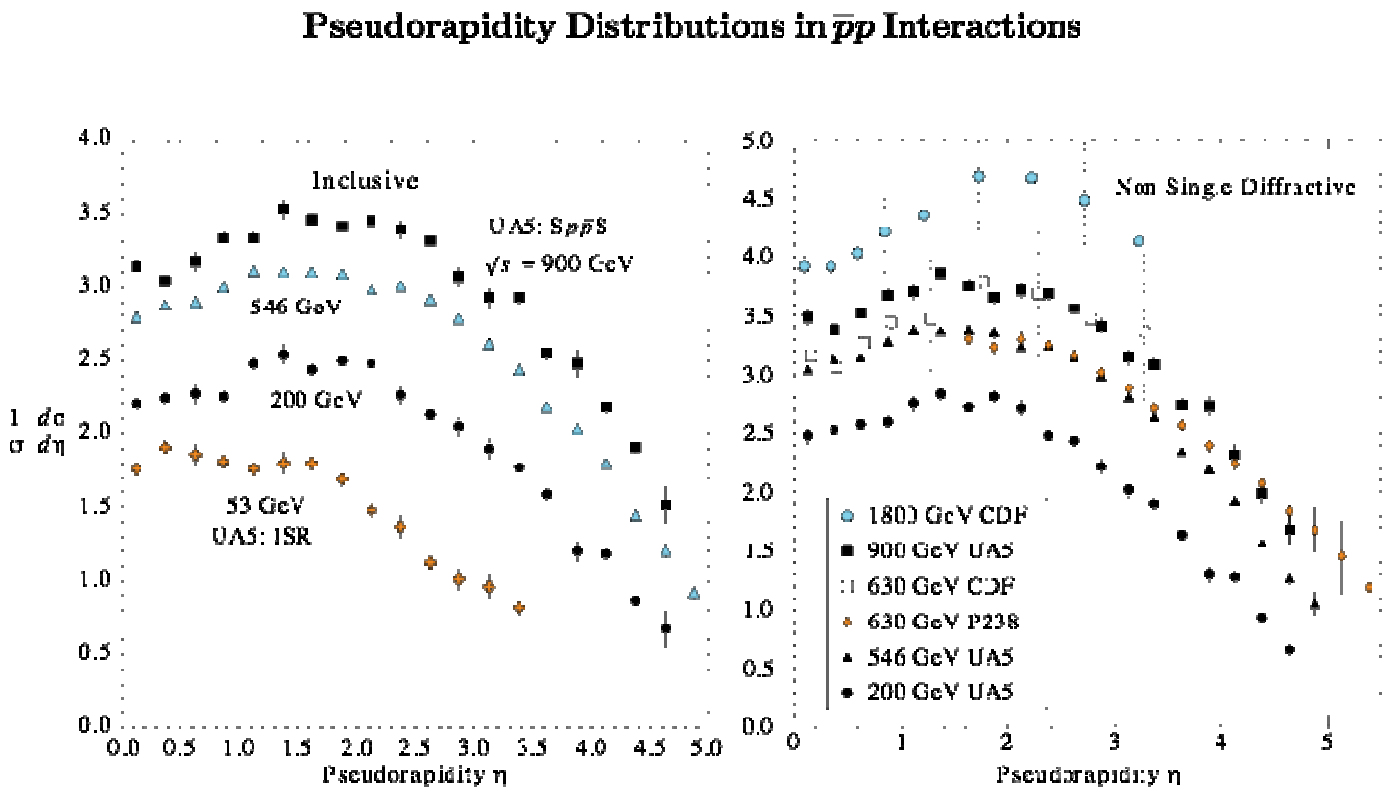


Figure 40.4: Charged particle pseudorapidity distributions in $p\bar{p}$ collisions for 53 GeV $\leq \sqrt{s} \leq$ 1800 GeV. UA5 data from the S$p\bar{p}$S are taken from G.J. Alner *et al.*, Z. Phys. **C33**, 1 (1986), and from the ISR from K. Alpgaard *et al.*, Phys. Lett. **112B**, 103 (1982). The UA5 data are shown for both the full inelastic cross-section and with singly diffractive events excluded. Additional non single-diffractive measurements are available from CDF at the Tevatron, F. Abe *et al.*, Phys. Rev. **D41**, 2330 (1990) and Experiment P238 at the S$p\bar{p}$S, R. Harr *et al.*, Phys. Lett. **B401**, 176 (1997). (Courtesy of D.R. Ward, Cambridge Univ., 1999.)

When do we need it?

- We are in our last year as PHOBOS
  - Not official decision yet, but a very likely outcome of DOE budget
- Personnel will be decreasing rapidly after Cu+Cu run
  - Departures of key staff`
  - Shift of efforts of local support to PHENIX & ATLAS
- Prefer to take O(1 day) of data as early as possible
  - Magnet off, of course!
- However, if other experiments will benefit from waiting until end June, this may be optimal for the program
  - We would be fine about doing 400+ GeV p+p in late June
- Fixing date is highest priority, to facilitate planning for reviving PHOBOS for 400 GeV