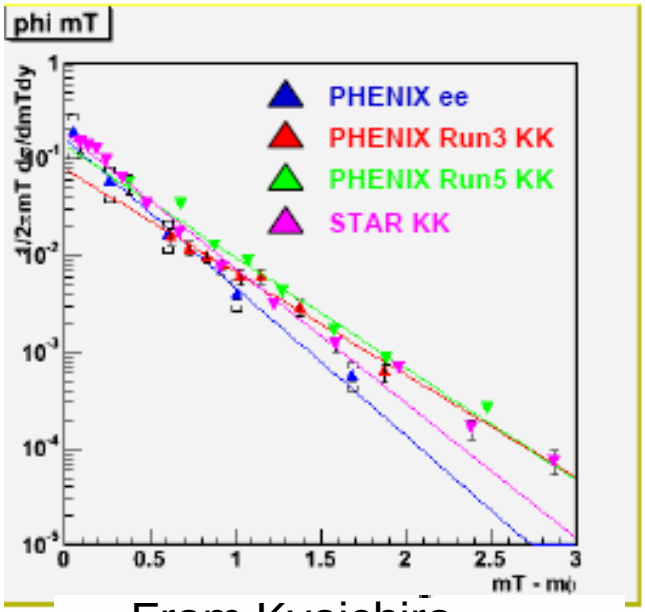
Comparison in pp data



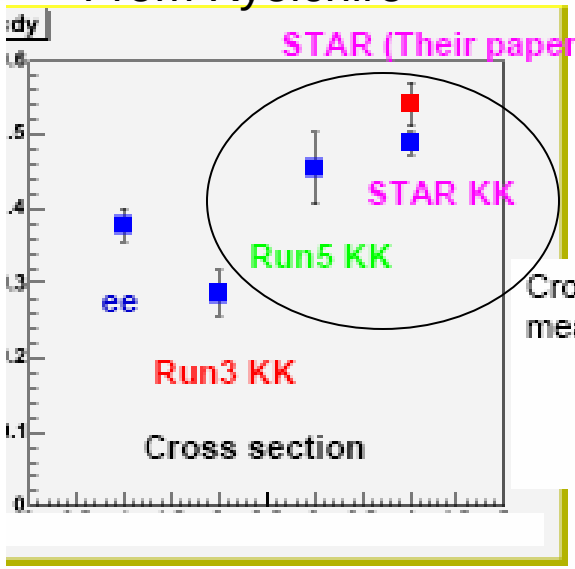
From Kyoichiro

Fitted by the function below.

$$\frac{dN/dy}{2\pi T(T+M_\varphi)} exp(-(m_t - M_\varphi)/T).$$

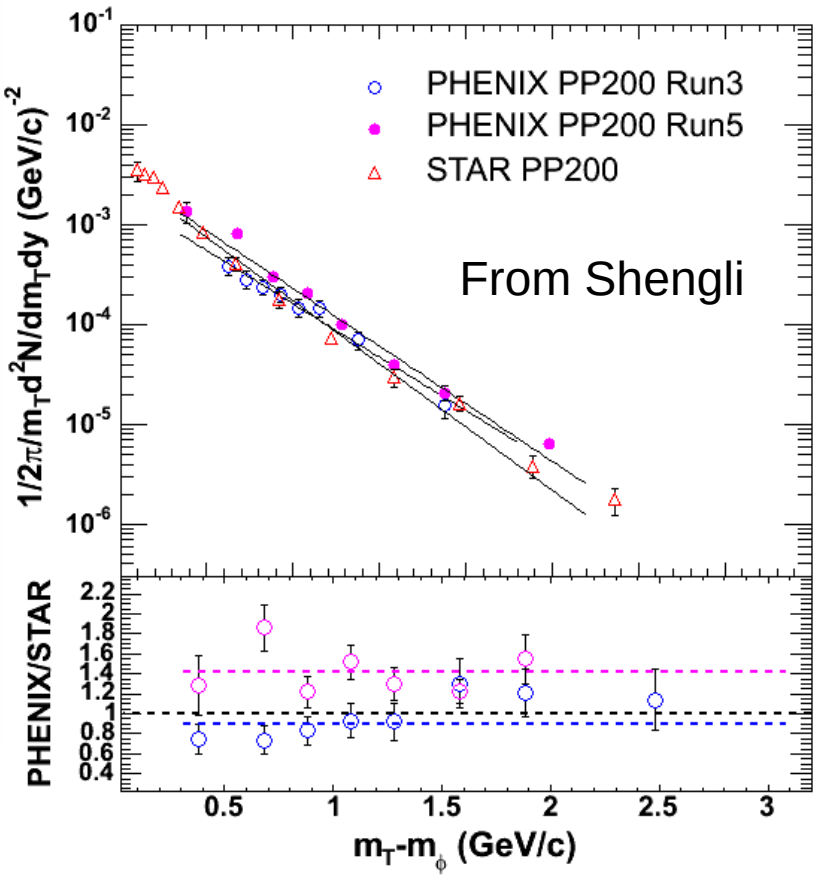
dσ/dy:
ee: 0.378377+-0.0223979
run3: 0.286702+-0.0307196
run5: 0.454145+-0.0477448
STAR: 0.488034+-0.0147505

Tempareture [GeV]:
ee: 0.281723+-0.0116449
run3: 0.407946+-0.0295471
run5: 0.376243+-0.0146728
STAR: 0.310289+-0.00788069



STAR used double exponential fit in their paper to calculate dN/dy.

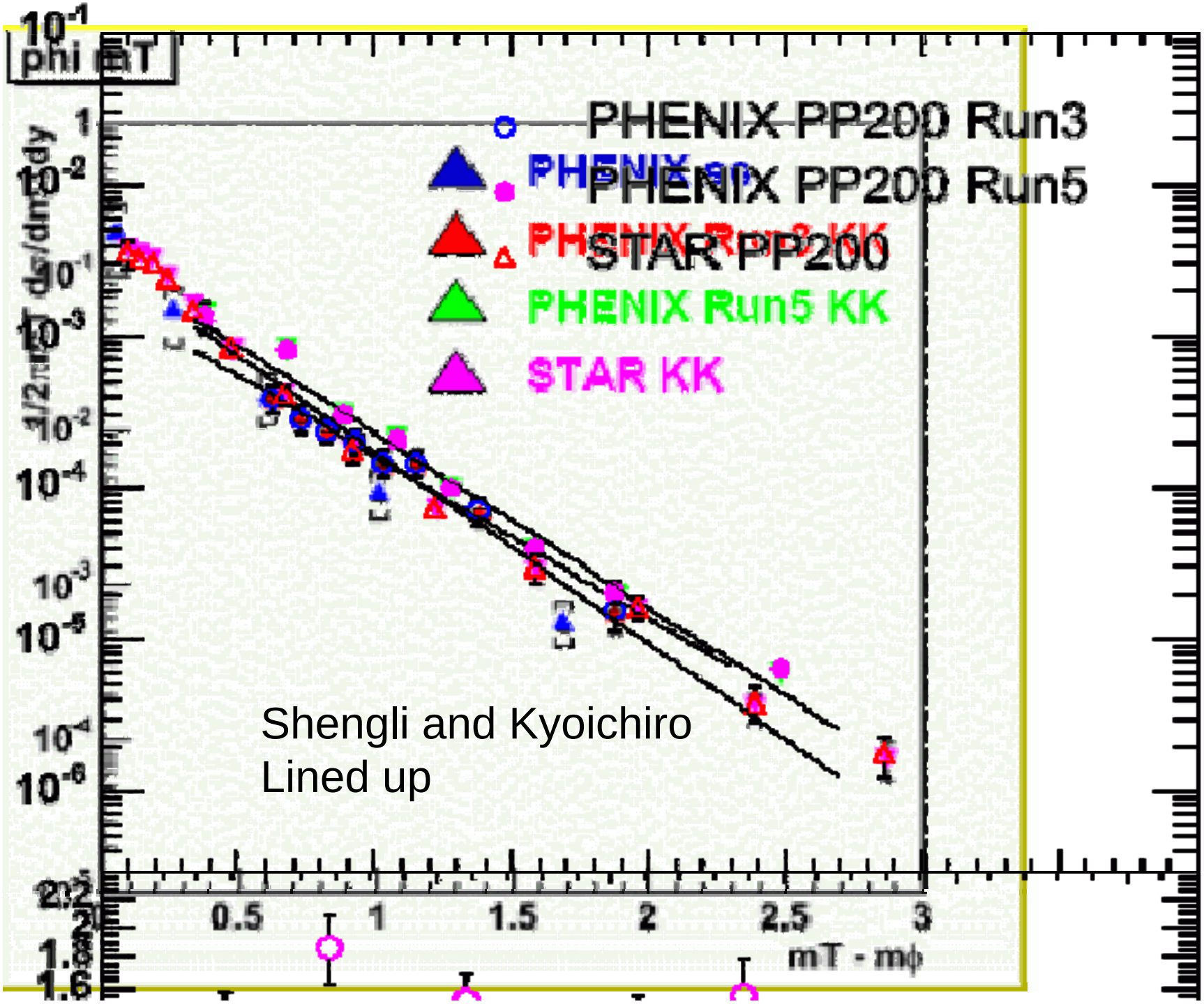
Cross section is calculated from measured invariant yields.
42 mb (For PHENIX)
30 mb (For STAR)
are used.

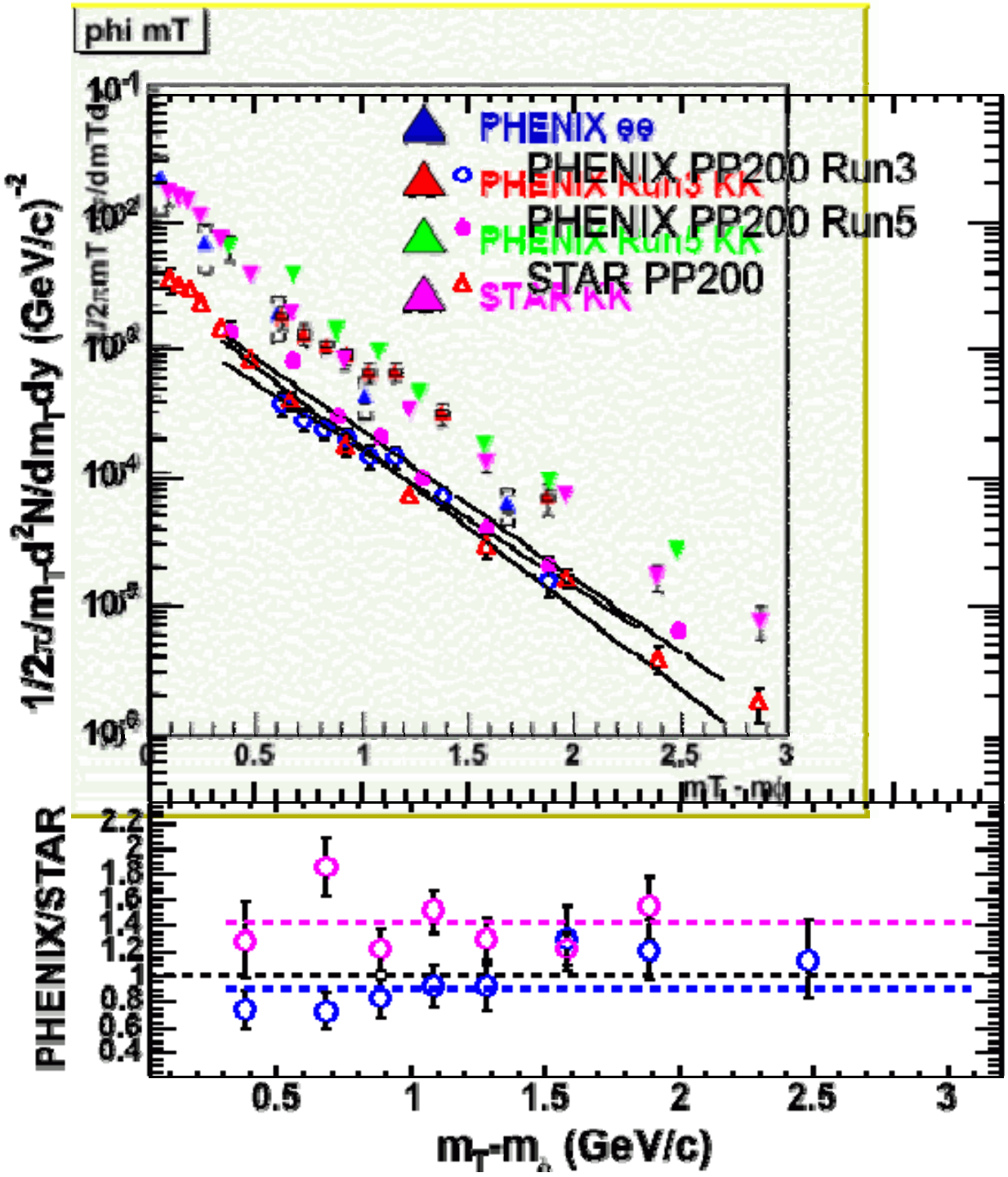


1.STAR NSD dN/dy has been ~~scaled to MiniBias dNdy~~

3.Phi spectra of Run5 pp is higher than Run3 and STAR

Which is consistent with STAR Run-3 or Run-5? – Both correct for NSD. One plots N, one plots sigma


phi mT
PHENIX PP200 Run3
PHENIX PP200 Run5
STAR PP200
PHENIX Run5 KK
STAR KK
Shengli and Kyoichiro
Lined up
mT - mφ



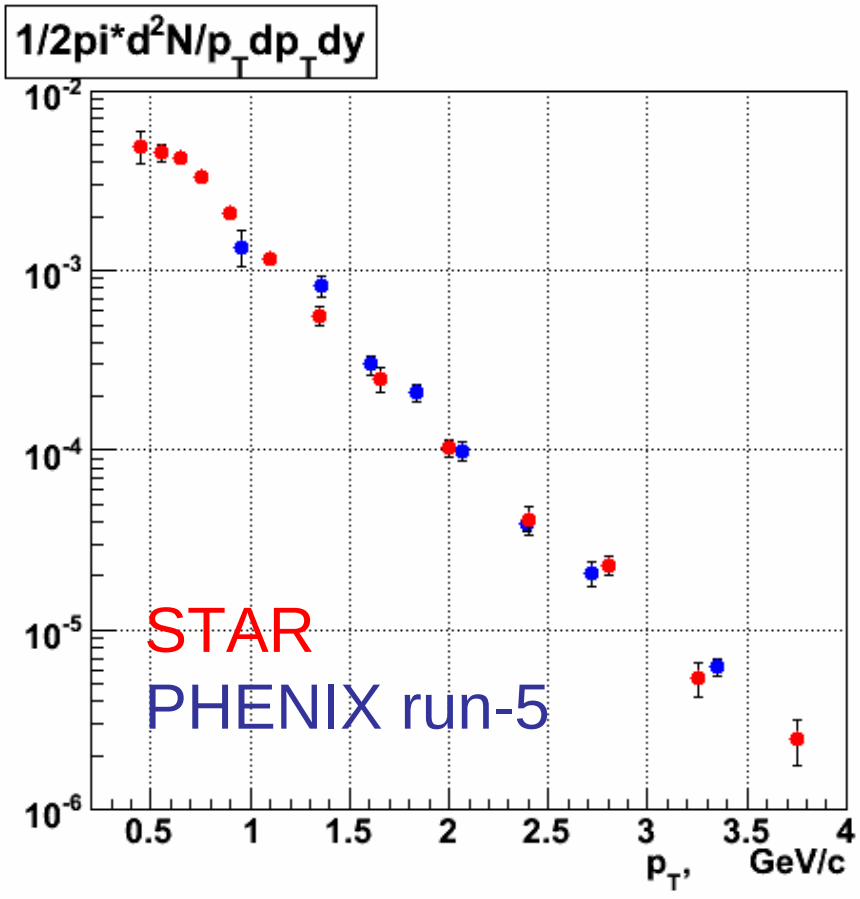
I have lined up the points (the previous plot) and here I just shift it in the y direction so that you can see the point.

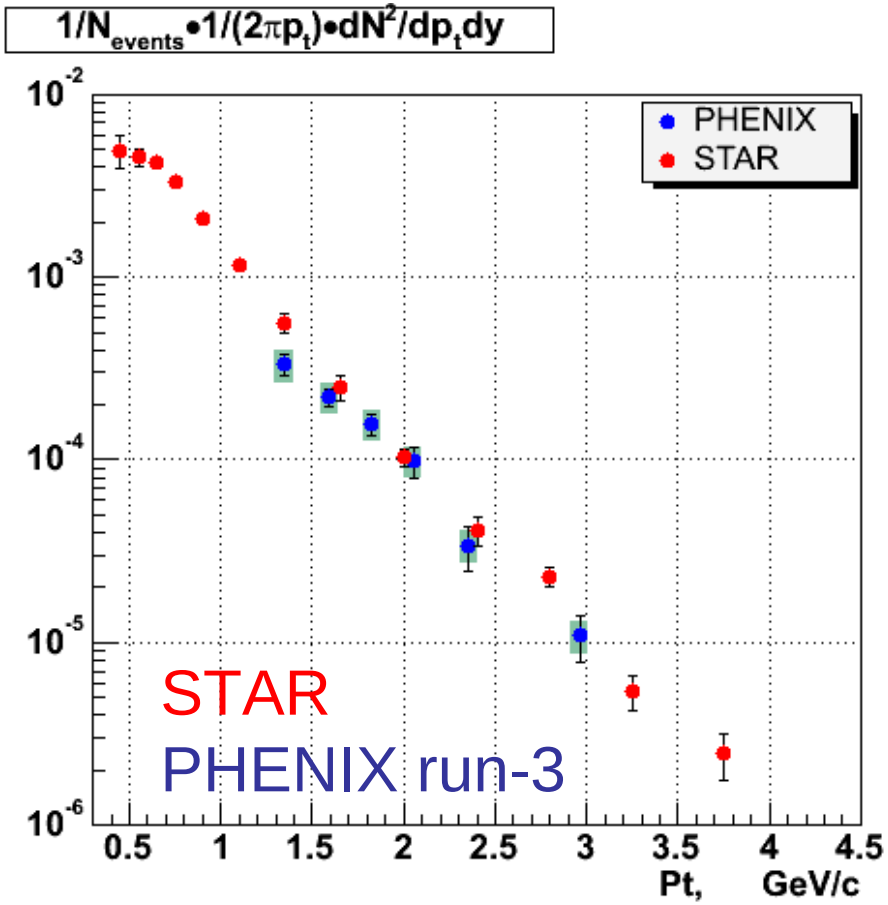
The problem Is that the mass scales are different! Kyoichiro's point go from 0 to 3 and Shengli's go from 0 to 2.5

So are the fits right and the conclusions about the dndy? Is it mt-m0 being plotted?

Can Kyoichiro and Shengli (and maybe Yuji And dmitri) Figure this out

Phi->KK in p+p: PHENIX vs. STAR from dmitri



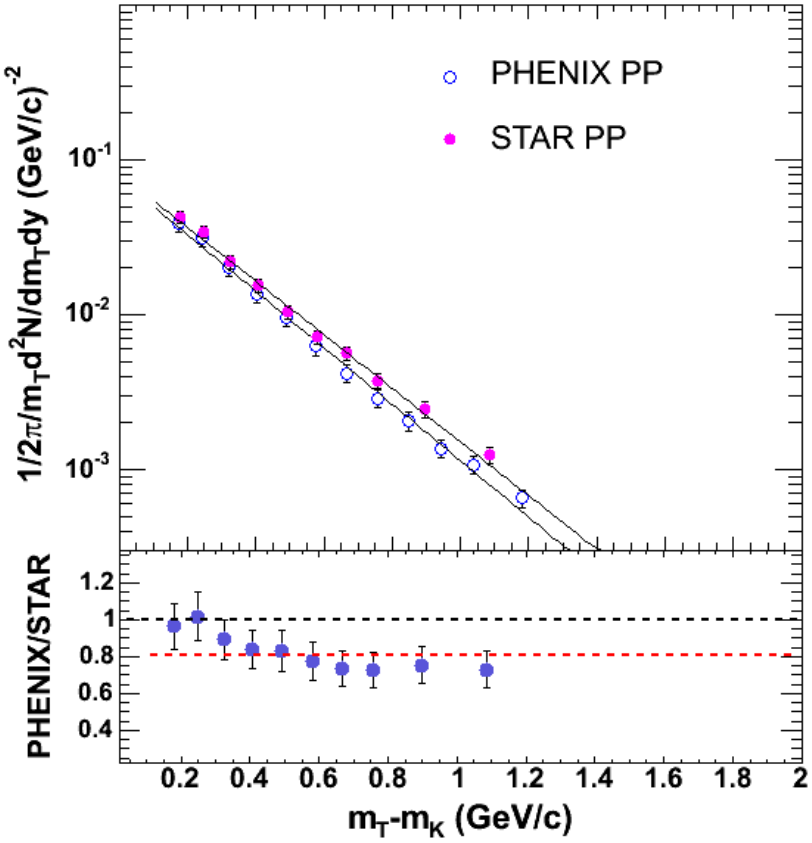


If I figure out mt-m0 from a pt(max) of 3.75 I get a mt-mt0=2.9 so it seems Kyoichiro's points are right - shengli – can you check?

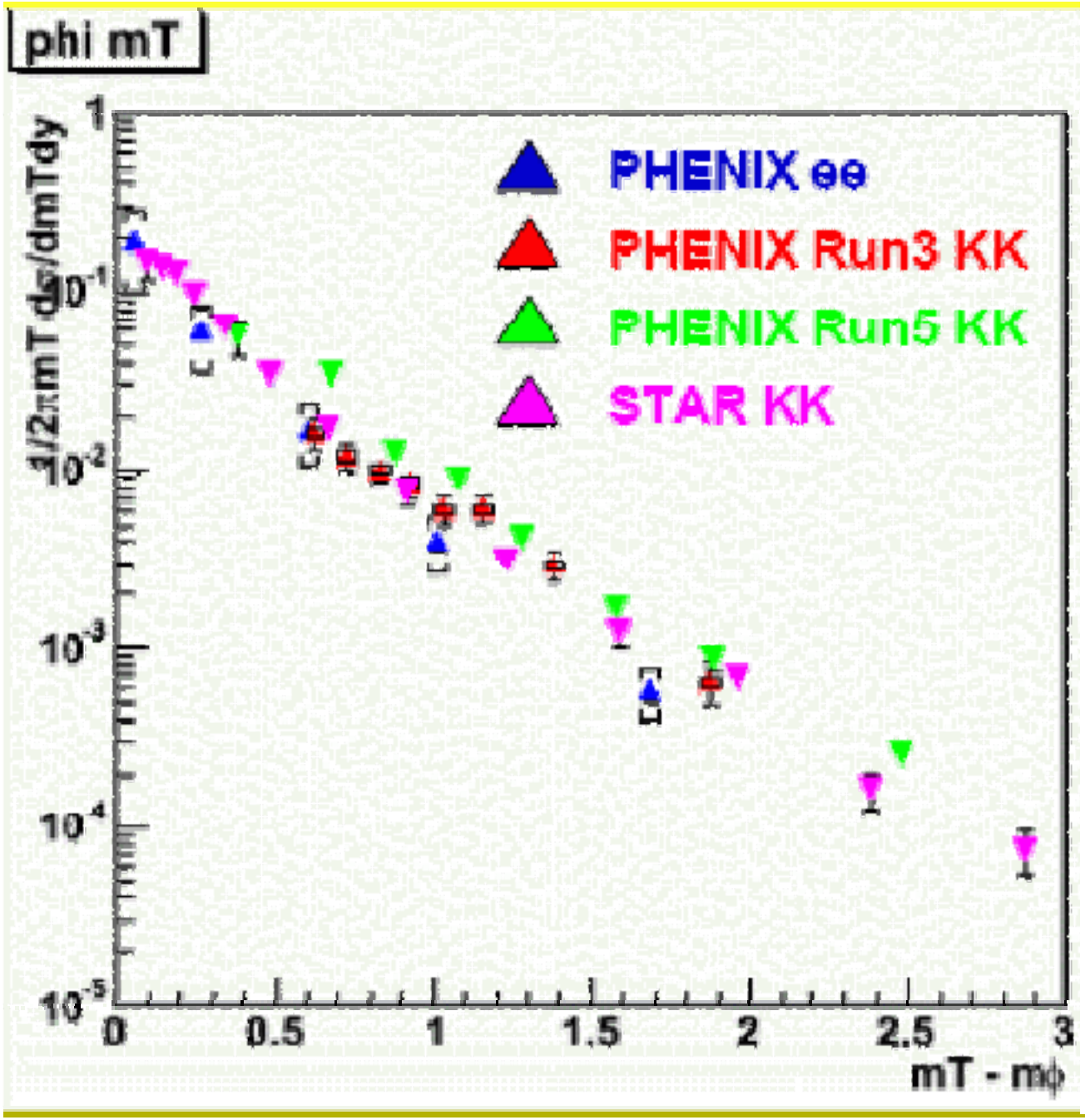
Shengli's KK comparison

If so, our Run-5 matches STAR?? not from the plot on the previous page in which there is a factor of the NSD cross section problem but from page 1 – i.e. Kyoichiro's plot – Can Shengli check this conclusion?

If this is true is it consistent with This plot? I note that the points below 300 MeV (3pts) are consistent. What are the mt-m0 of the kaons contributing to our phi spectrum??? Shengli or Maxim or dmitri – do you know?



1.STAR NSD dN/dy has been scaled to MiniBias dNdy
2.Single kaon is around 80% of STAR



If I look carefully at the run 5 KK compared to STAR I find that we are still above the STAR data Points. If so, then this Is consistent with Shengli's Kaon comparison

The reason that STAR and PHENIX Dndy match is because STAR has a rise at low pt and does a Double exponential fit. (or conversely if we did a similar double exponential fit, we would be above STAR by our canonical 75% or so)

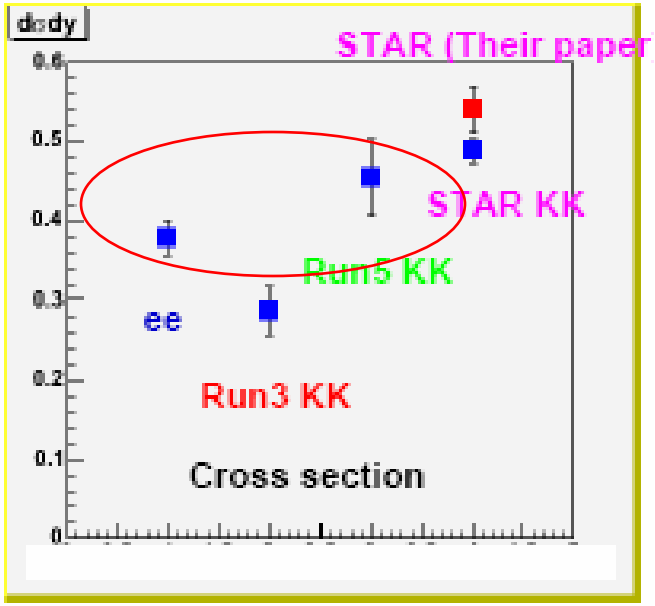
Does STAR do a double Exponential fit in the Au Data?

Prelim thought

- Assume Shengli and kyoichiro check their calculation and my guesses are right then
- All of our KK data are self consistent i.e. its all 75% higher than star. This can be partially be explained by the 25% difference in the Kaons (i.e. 60% of the 75%)
- Still I have this nagging feeling that there is yet one other factor since I remember that in some comparisons there is greater than a factor of 2 difference between the AuAu phi to KK between STAR and PHENIX

Prelim thought II

- We then have that the ee and KK dndy is consistent with each other in pp and only deviates as we go to dAu (or as Sasha showed, very peripheral AuAu) and then more at AuAu. We can only make a statement from peripheral AuAu to mid-central. We do not have the statistics to say anything about Npart>150.
- Would this then be consistent with the kind of stuff seen at KEK? Strong stuff…
- Problems (among others) we must deal with
  - what happened to run-3 pp KK
  - Why are run2 and run 4 AuAu KK different?



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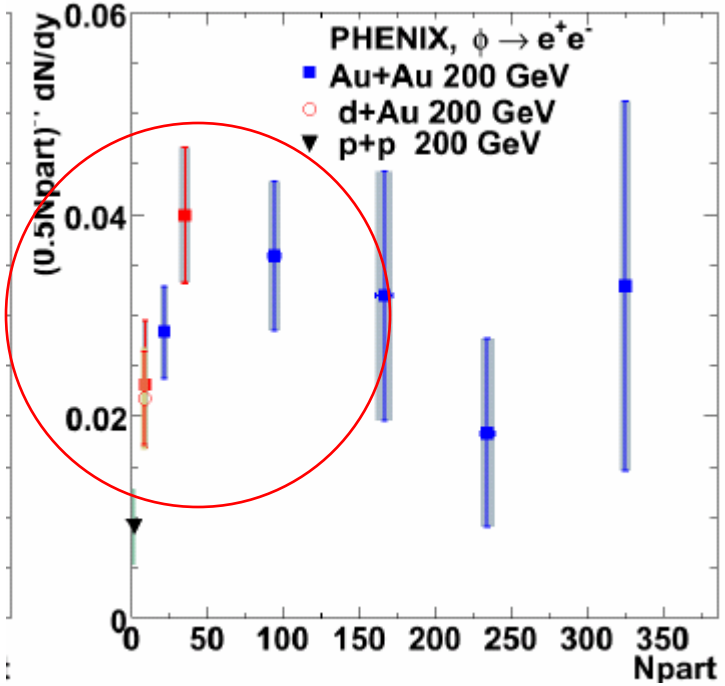

φ → ee, KK analyses