



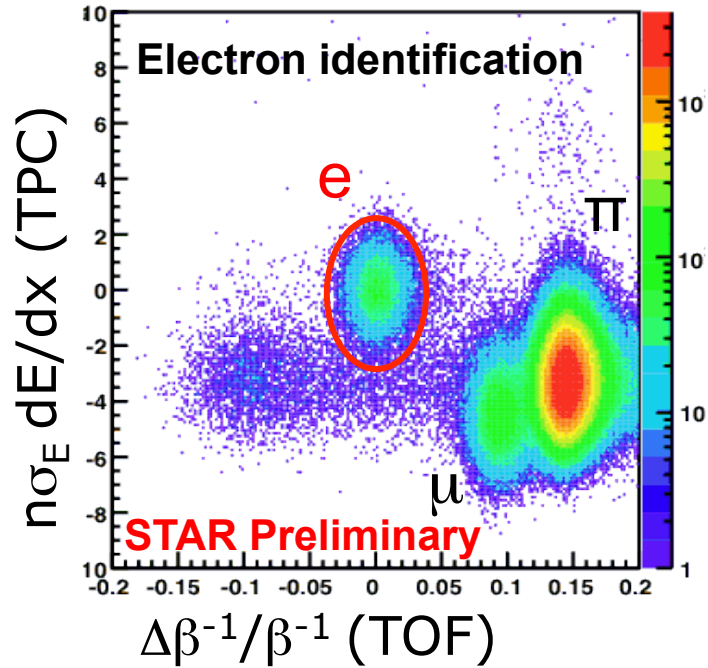
ϕ and ω Mesons from Dielectron Decays at STAR



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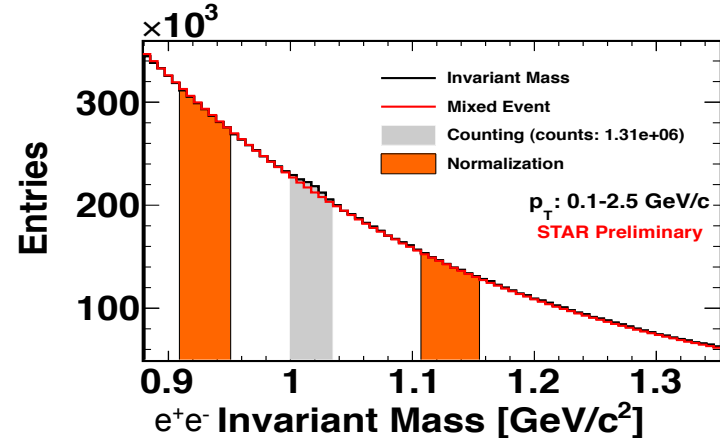


$\phi(1020) \rightarrow e^+e^-$ Signal

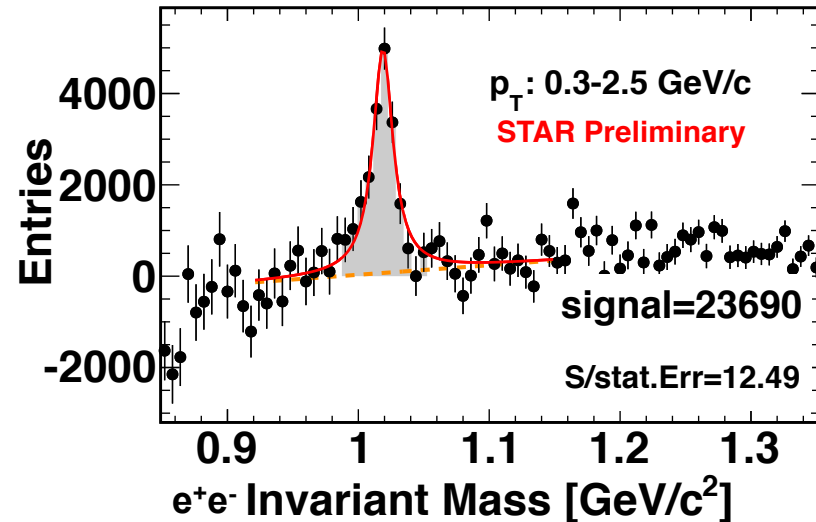


Au+Au (0-80%) $\sqrt{s_{NN}} = 200\text{GeV}$

Normalized Mixed Event Background

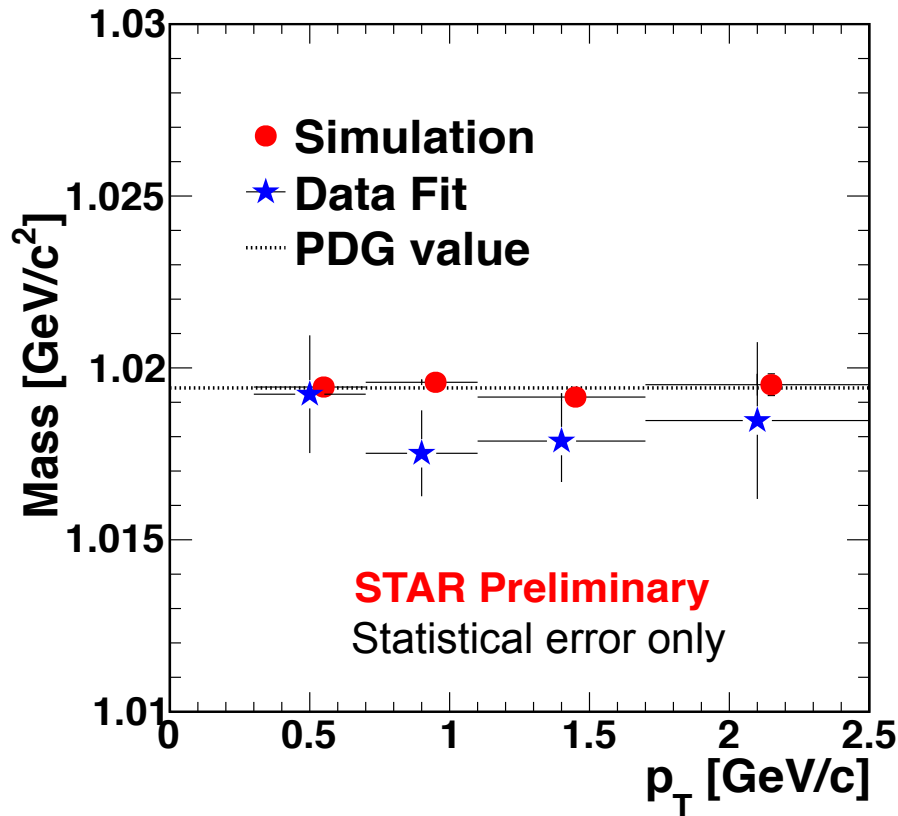


After Background Subtraction

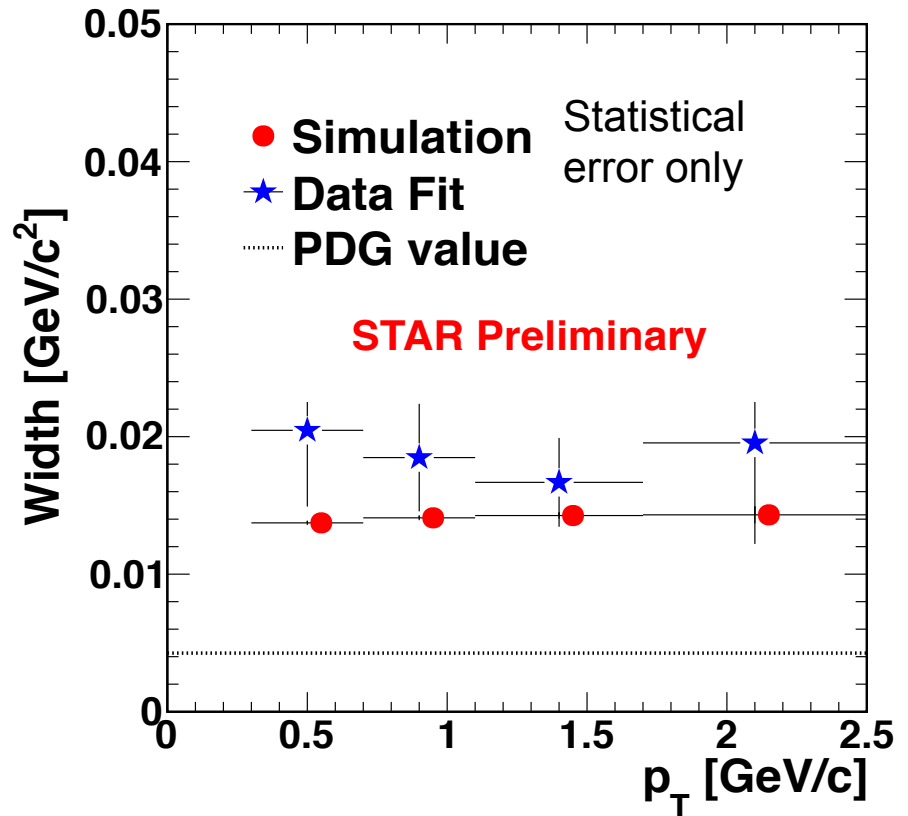


ϕ Mass & Width vs. p_T

Fit with Breit-Wigner function



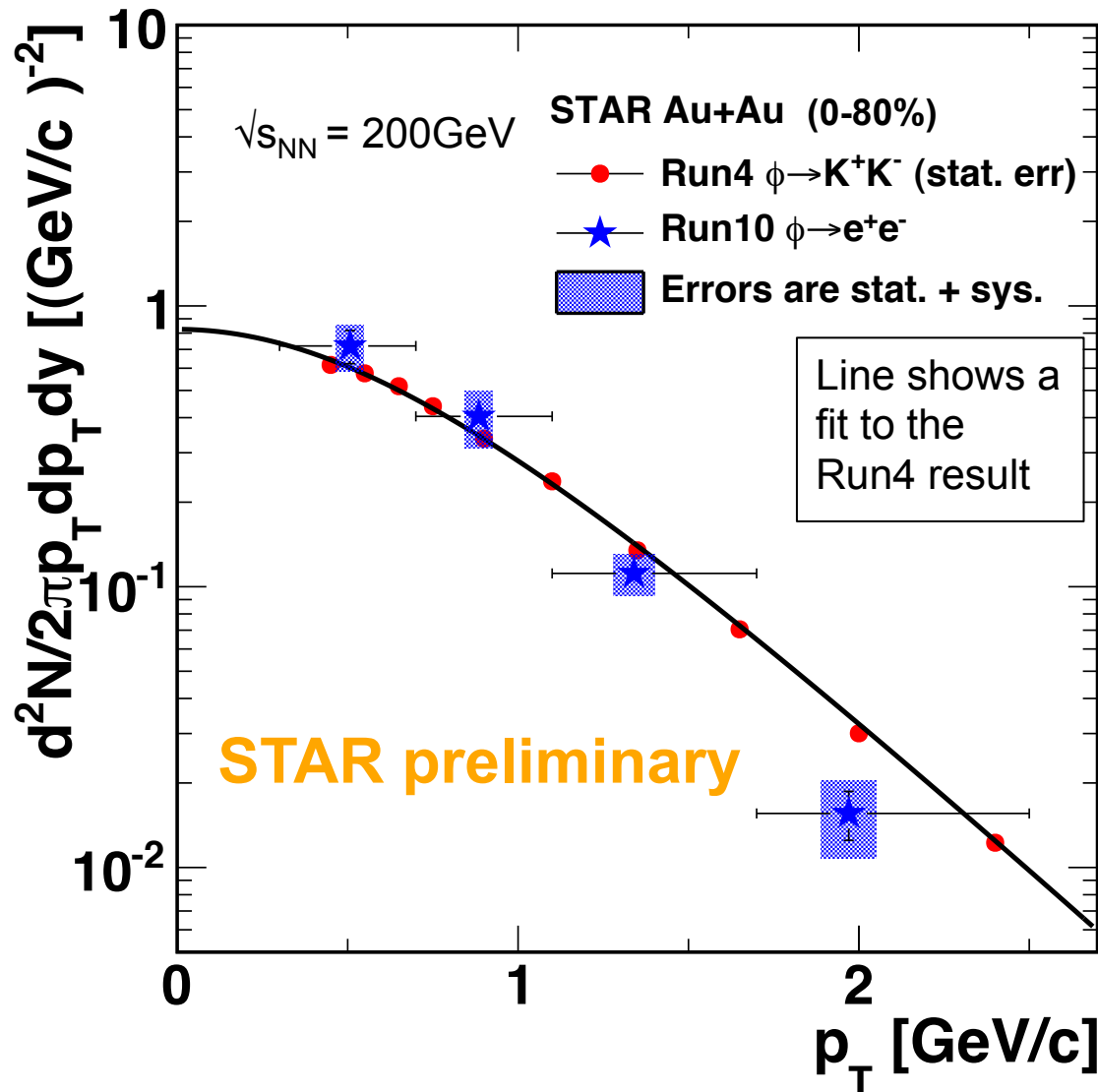
Au+Au (0-80%) $\sqrt{s_{NN}} = 200$ GeV



Mass and width are in agreement with the simulation.

→ **No mass shift or width broadening**

Comparison to Hadronic Decay



No significant difference between hadronic and leptonic decay channel within the errors.

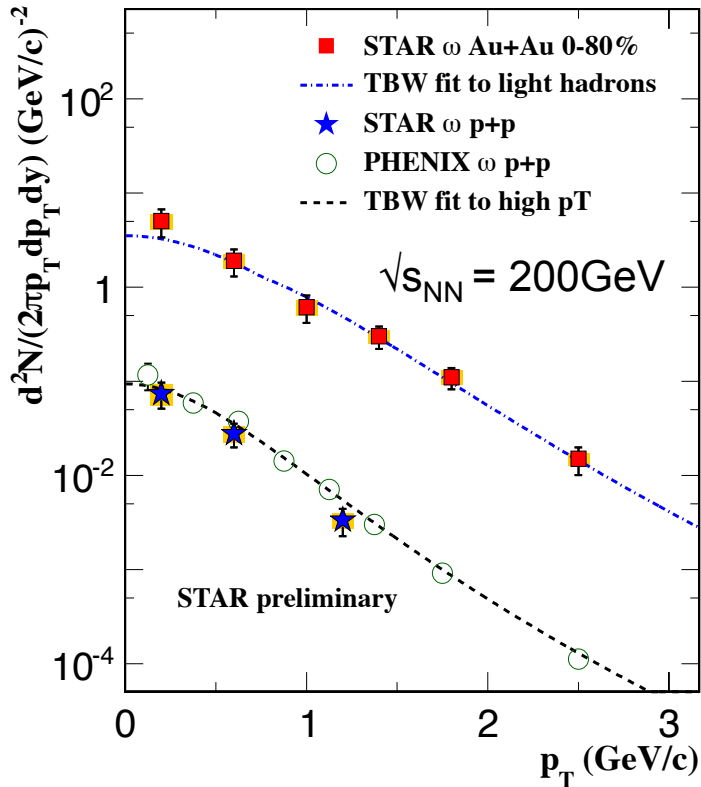
This study $\phi \rightarrow e^+e^-$ (0-80%)
 $\langle p_T \rangle = 0.87 \pm 0.05 \pm 0.07$ [GeV/c]
 $dN/dy = 2.87 \pm 0.17 \pm 0.23$

Run4 $\phi \rightarrow K^+K^-$ (0-80%)
 $\langle p_T \rangle = 0.96 \pm 0.01$ [GeV/c]
 $dN/dy = 2.68 \pm 0.15$
 (Stat. err only)

B. I. Abelev et al., Phys. Rev. C79, 064903 (2009)

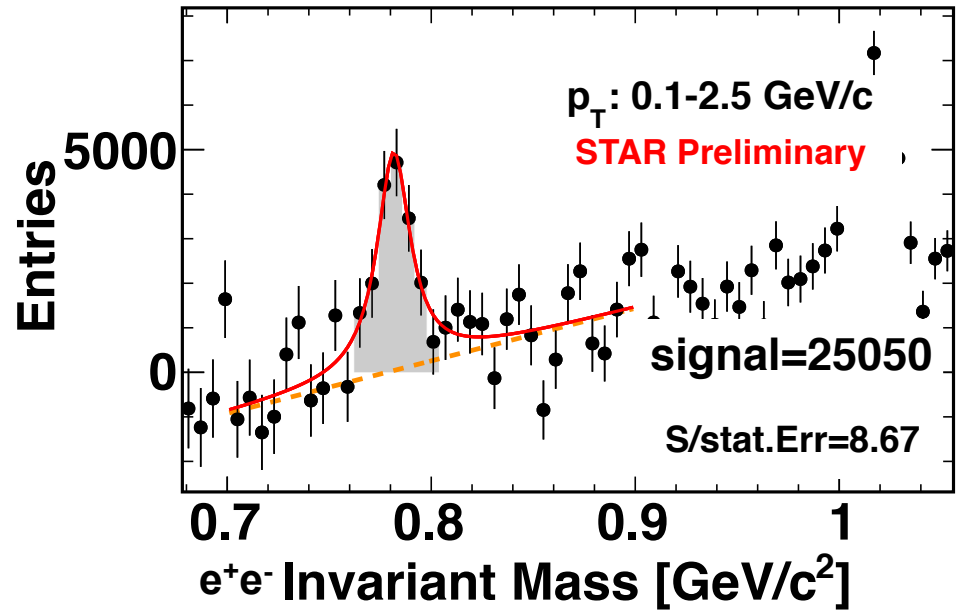
$\omega(782) \rightarrow e^+e^-$

Production in p+p and Au+Au



- p+p and Au+Au results are consistent with the predictions based on a Tsallis-Blast-Wave fit.
- p+p results are consistent with PHENIX results.

Au+Au (0-80%) $\sqrt{s_{NN}} = 200 \text{ GeV}$



Measurement of ω mass and width are under study.

STAR result: Phys. Rev. C **86** 024906 (2012)
 PHENIX result: Phys. Rev. D **83**, 052004 (2012)

Summary

- The $\phi \rightarrow e^+e^-$ result is **consistent** with $\phi \rightarrow K^+K^-$ result.
- **No mass shift or width broadening** beyond the known detector effects are observed for ϕ mesons.
- The ω meson production in dielectron channel in p+p and Au+Au is measured and agrees with previous measurements.
- At BES physics program high statistics data is needed.

