Beauty hardon production in Pb-Pb collisions with Bayesian unfolding

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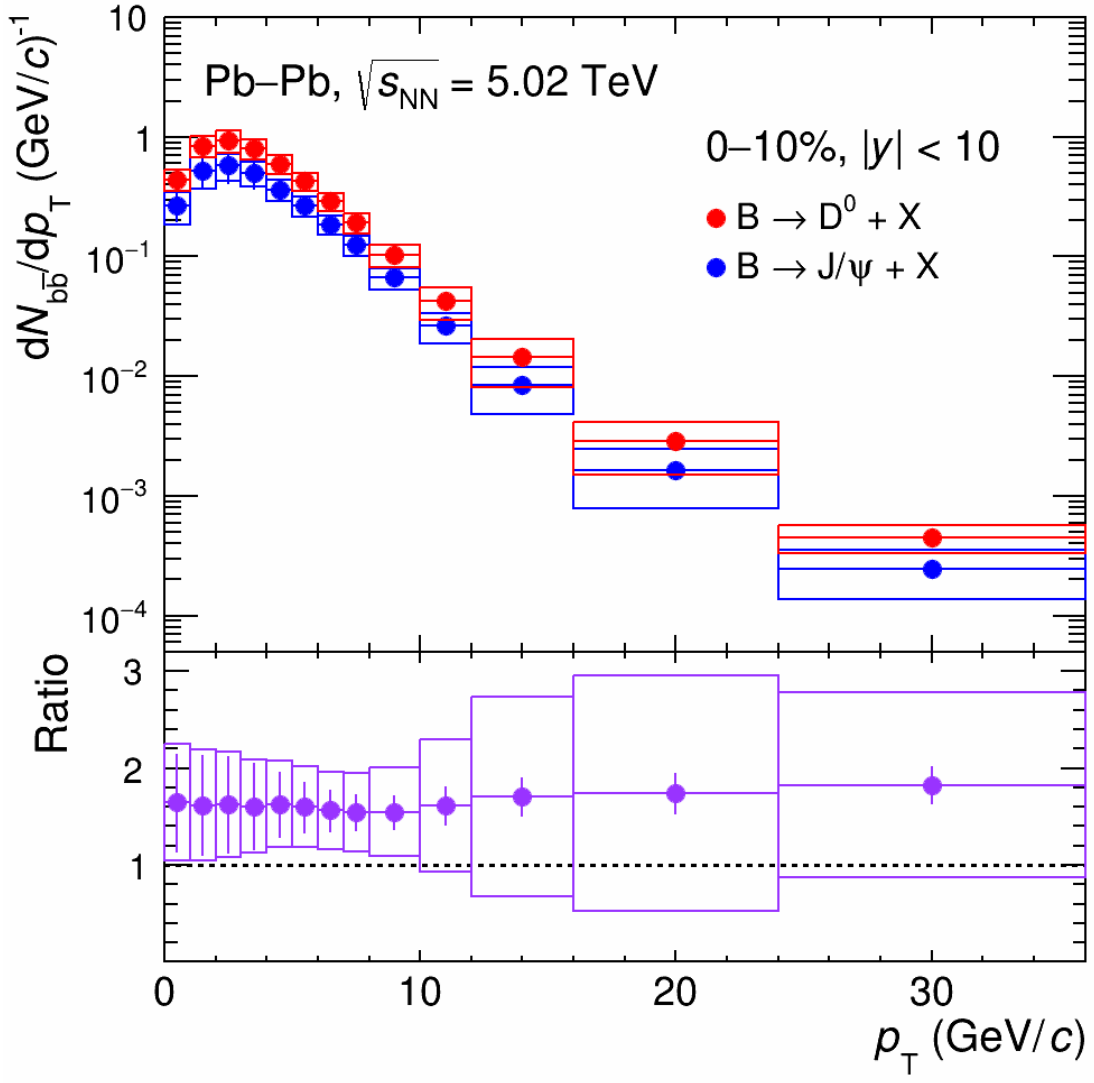
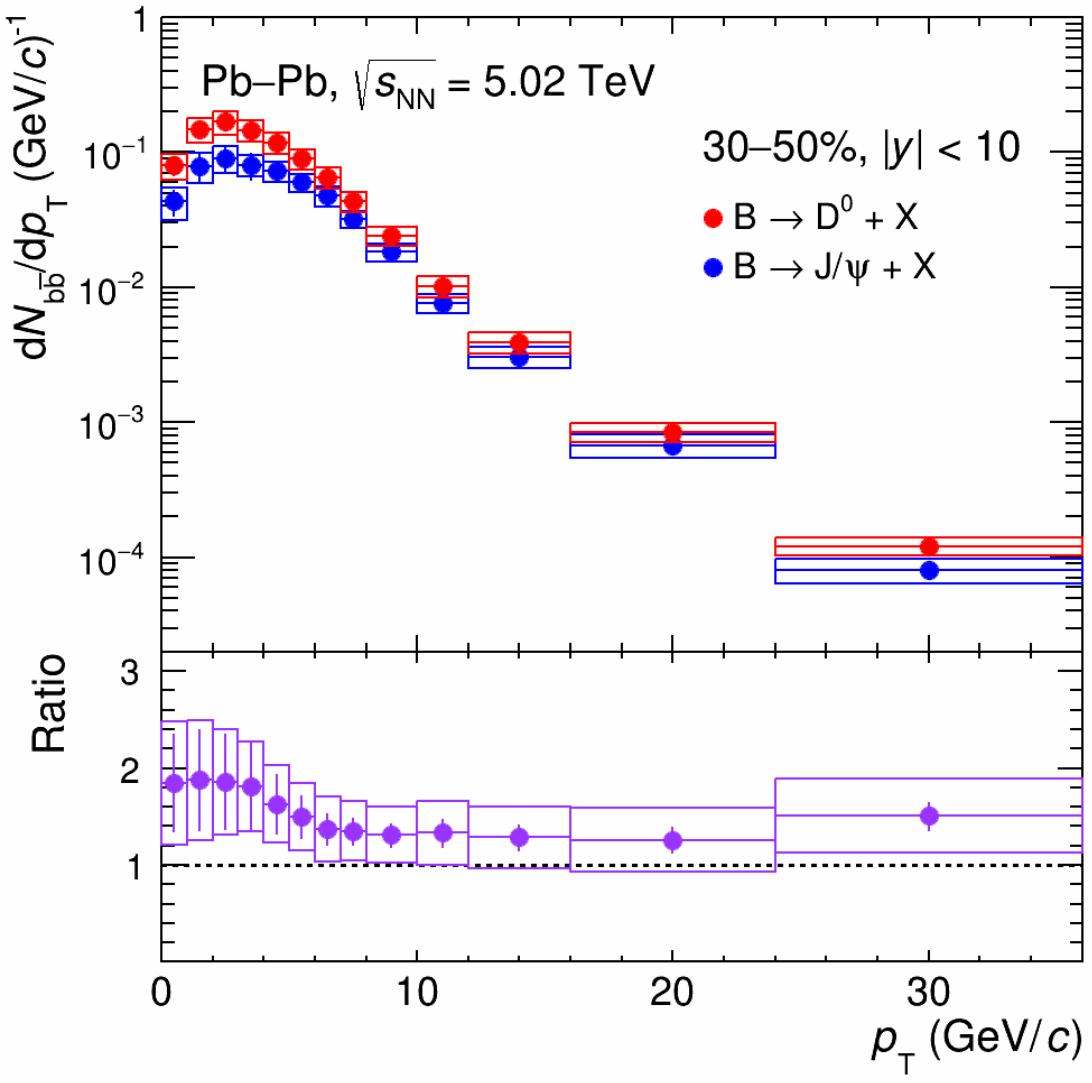
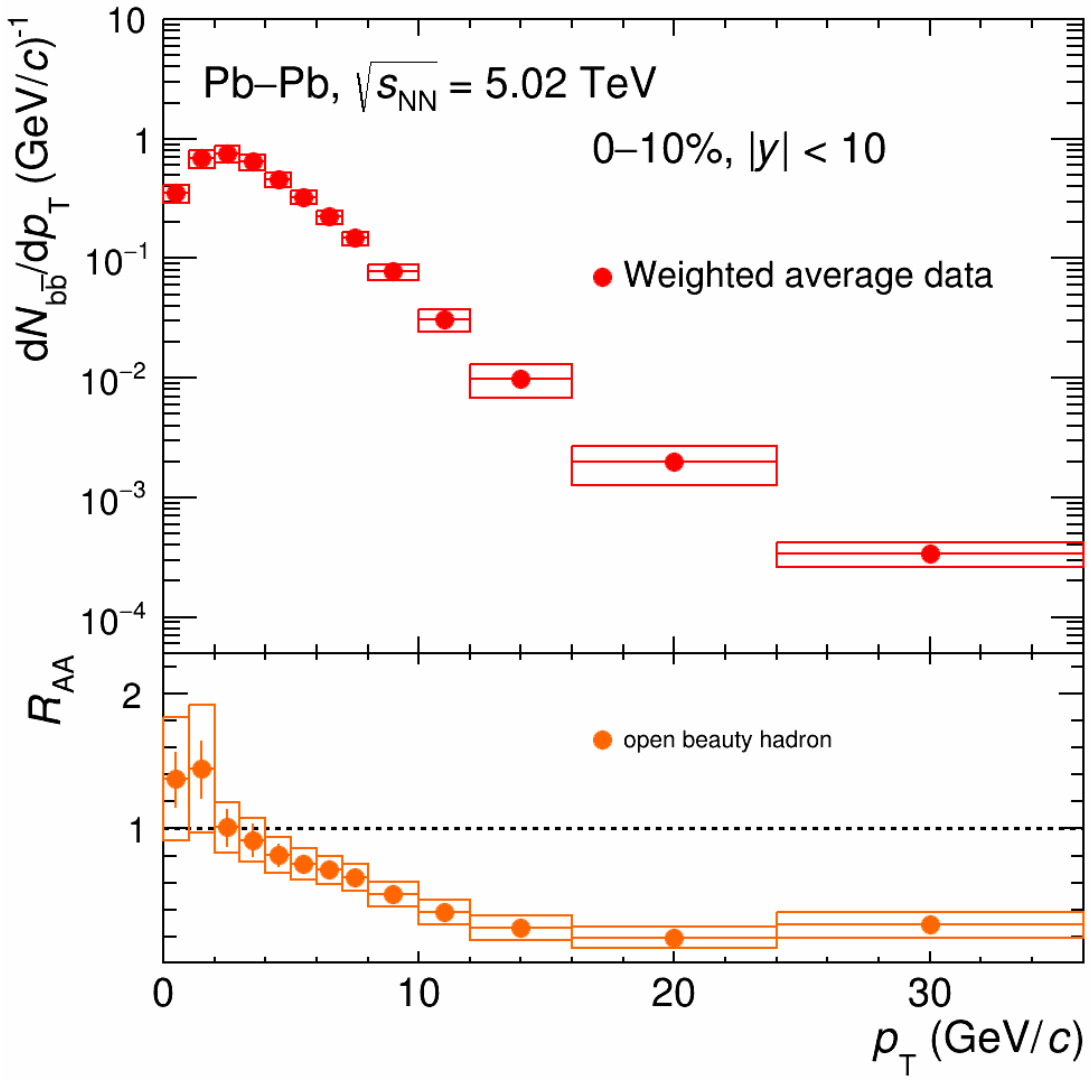
University of Science and Technology of China

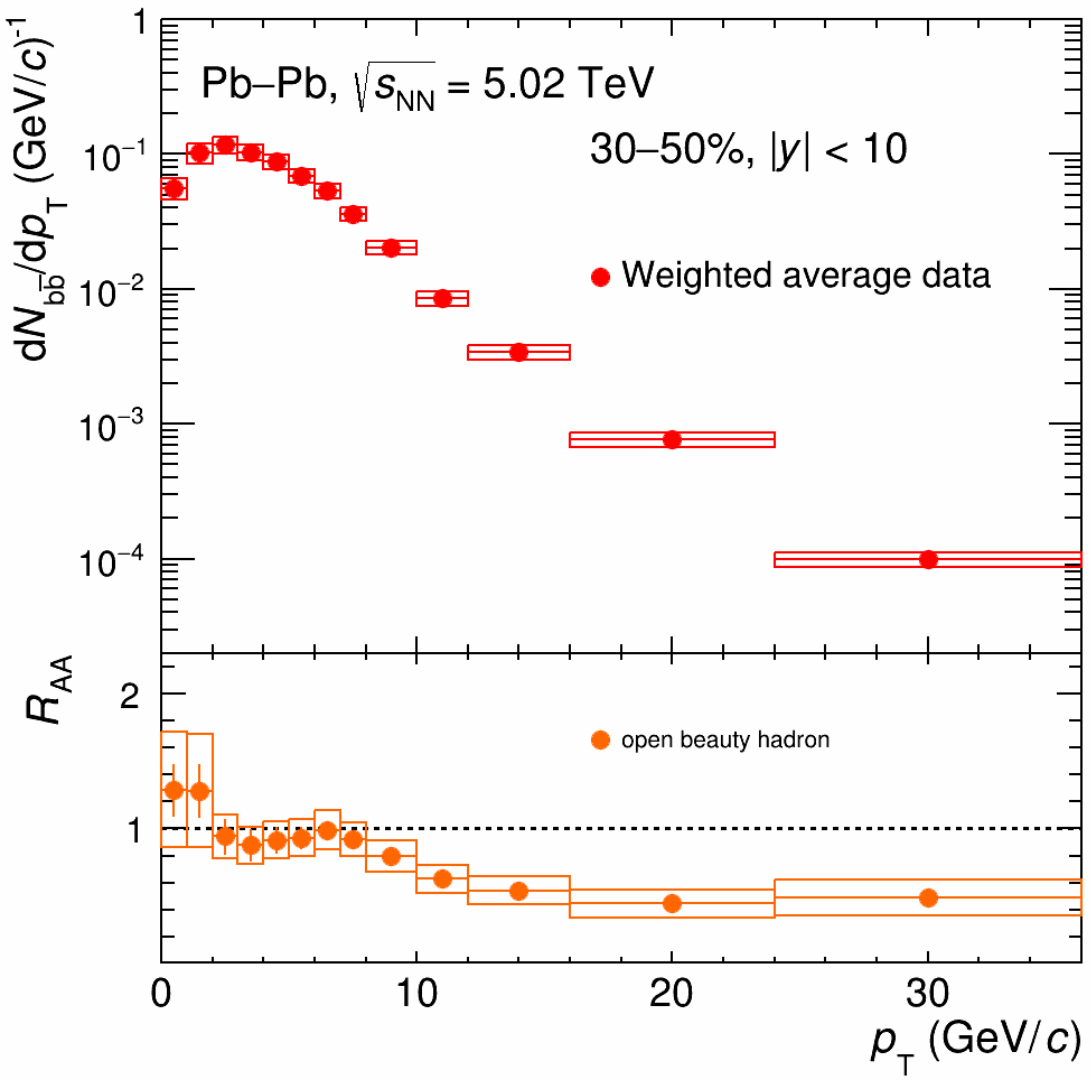
dN/dpT at |y| < 10


Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV
0–10%, |y| < 10
B → D⁰ + X
B → J/ψ + X
$dN_{b\bar{b}}/dp_T$ (GeV/c)⁻¹
Ratio
p_T (GeV/c)

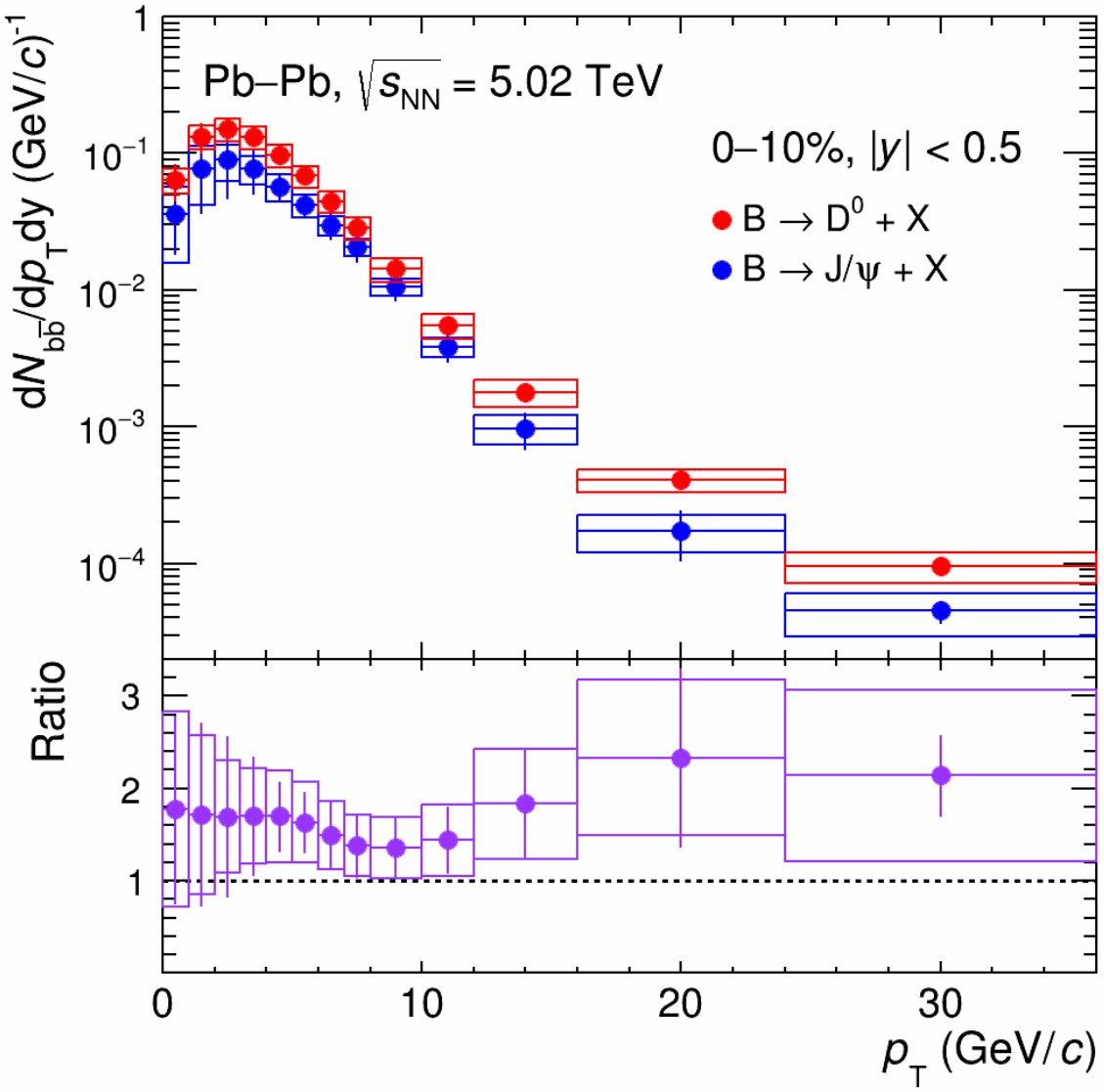

Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV
30–50%, |y| < 10
B → D⁰ + X
B → J/ψ + X
$dN_{b\bar{b}}/dp_T$ (GeV/c)⁻¹
Ratio
p_T (GeV/c)

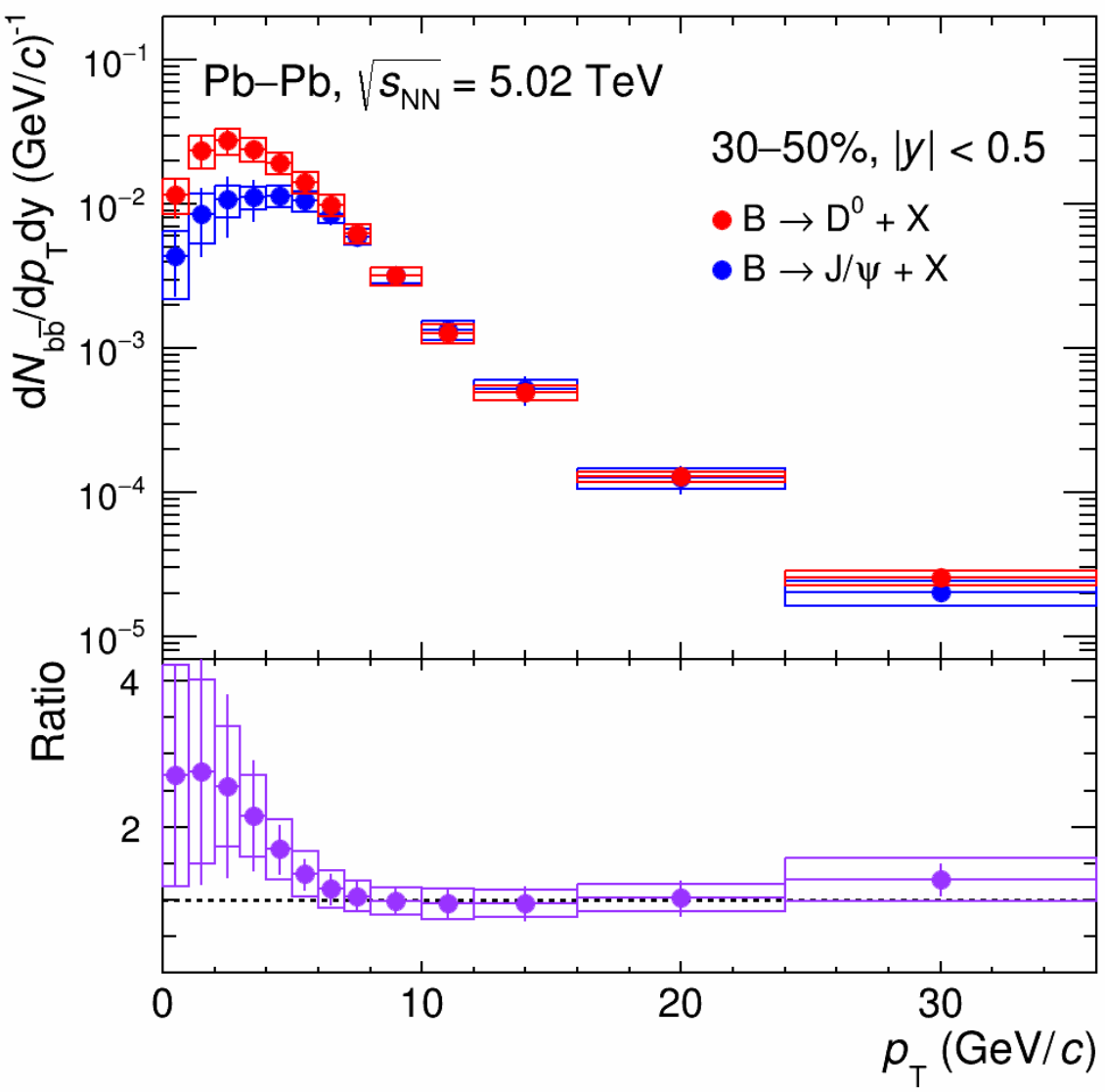
dN/dpT at |y| < 10


Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV
0–10%, |y| < 10
Weighted average data
open beauty hadron
$dN_{b\bar{b}}/dp_T$ (GeV/c)$^{-1}$
R_{AA}
p_T (GeV/c)

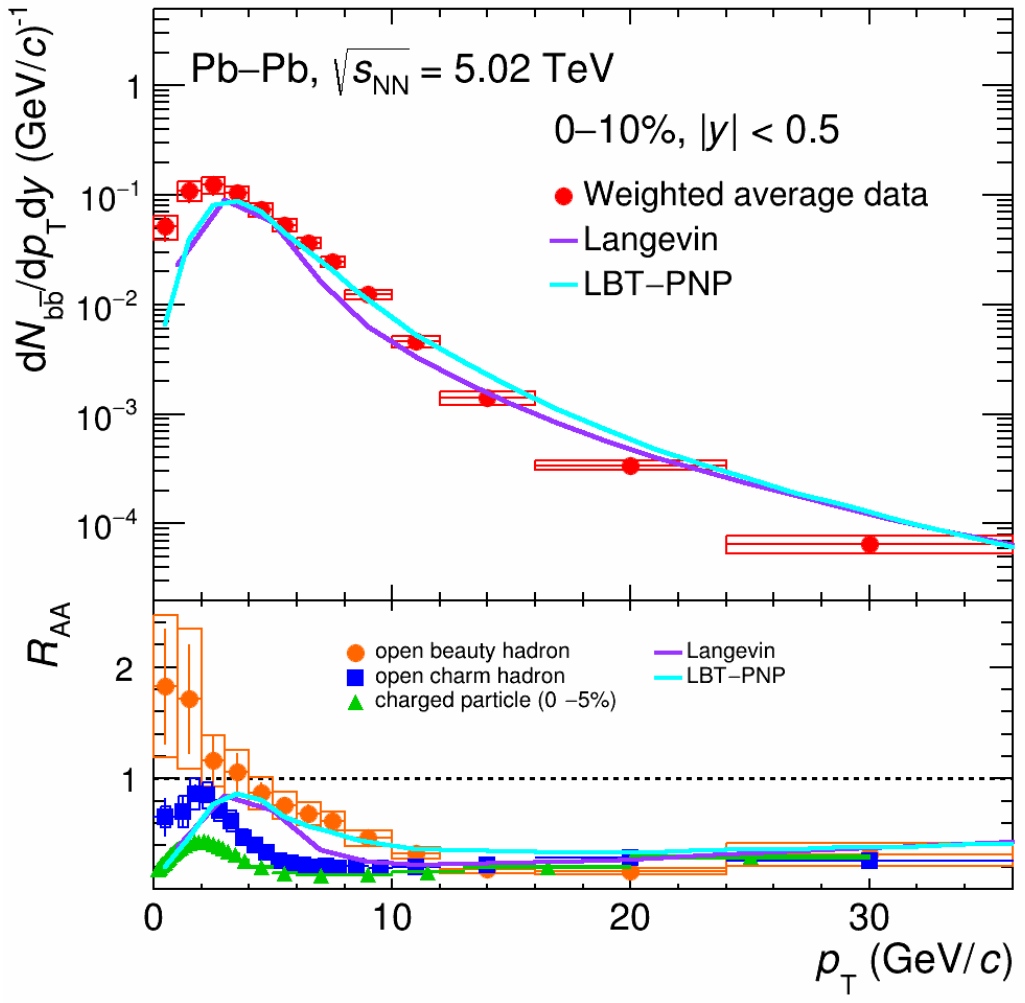

Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV
30–50%, |y| < 10
Weighted average data
open beauty hadron
$dN_{b\bar{b}}/dp_T$ (GeV/c)$^{-1}$
R_{AA}
p_T (GeV/c)

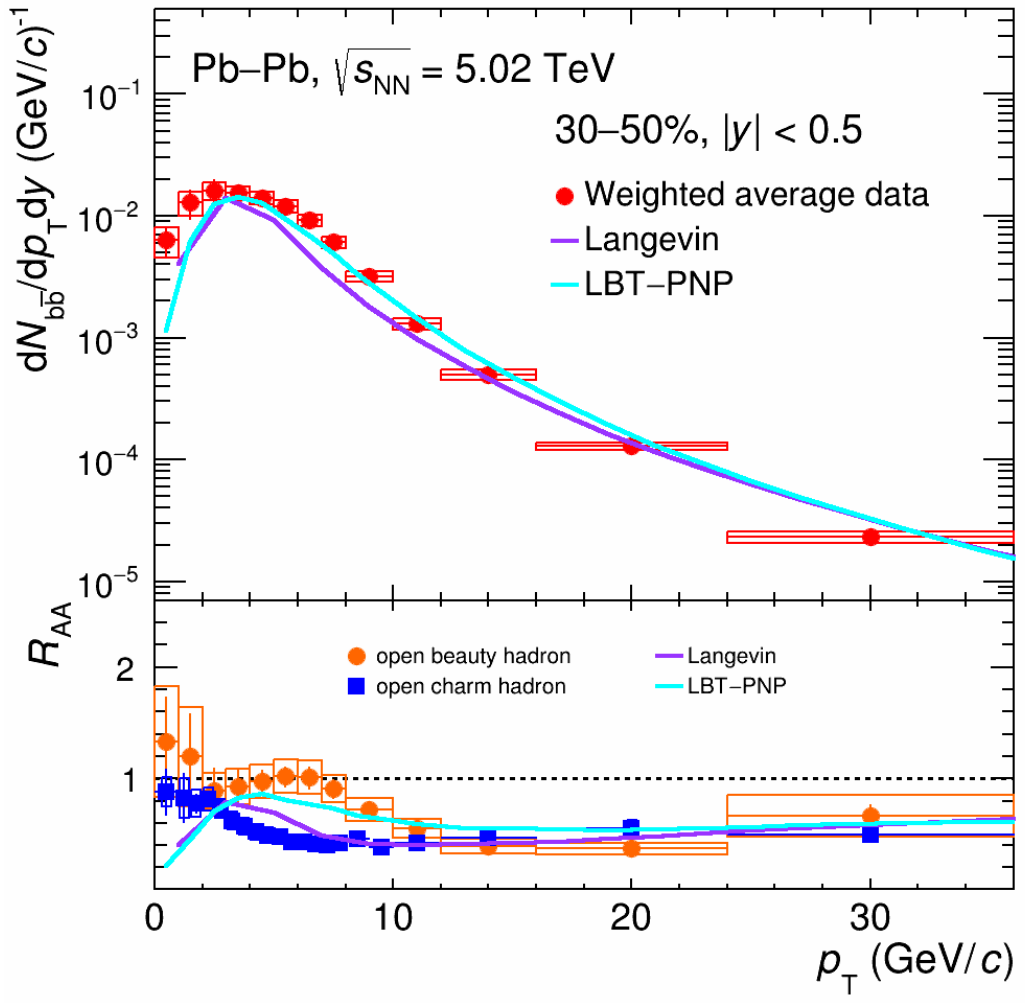
dN/dpTdy at mid-rapidity



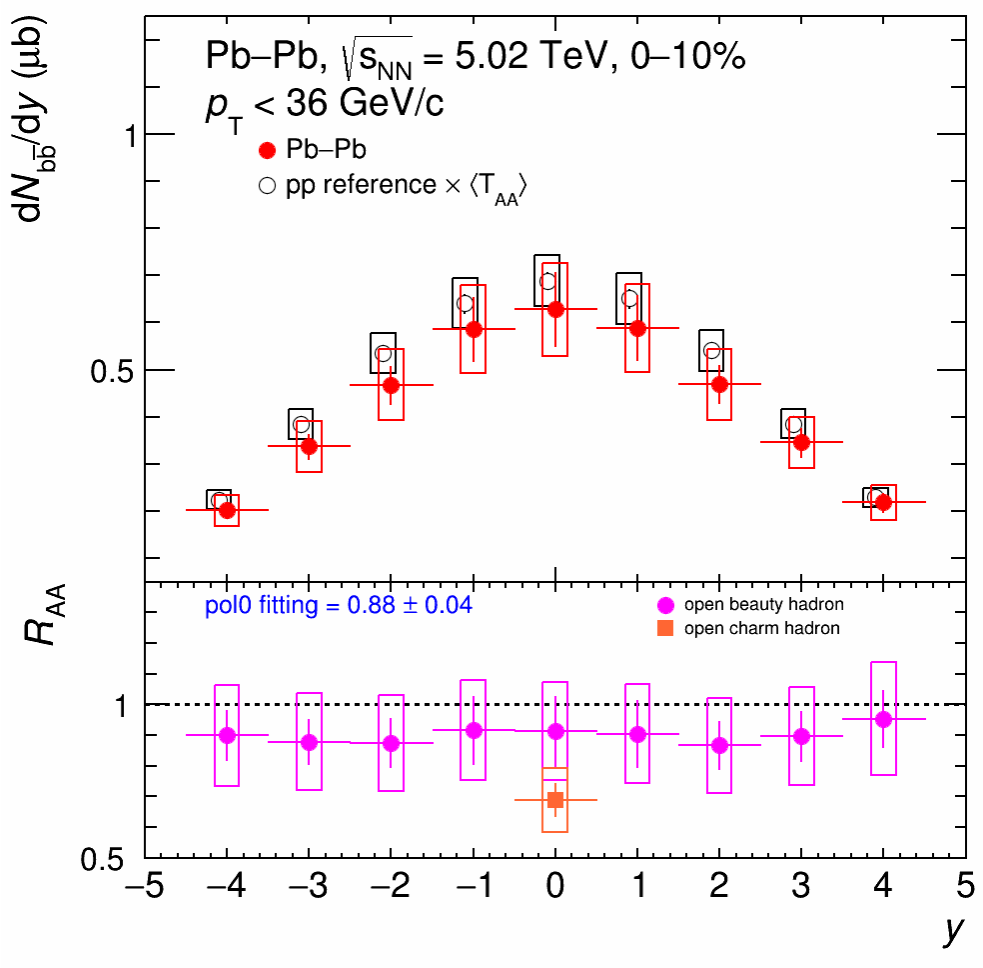


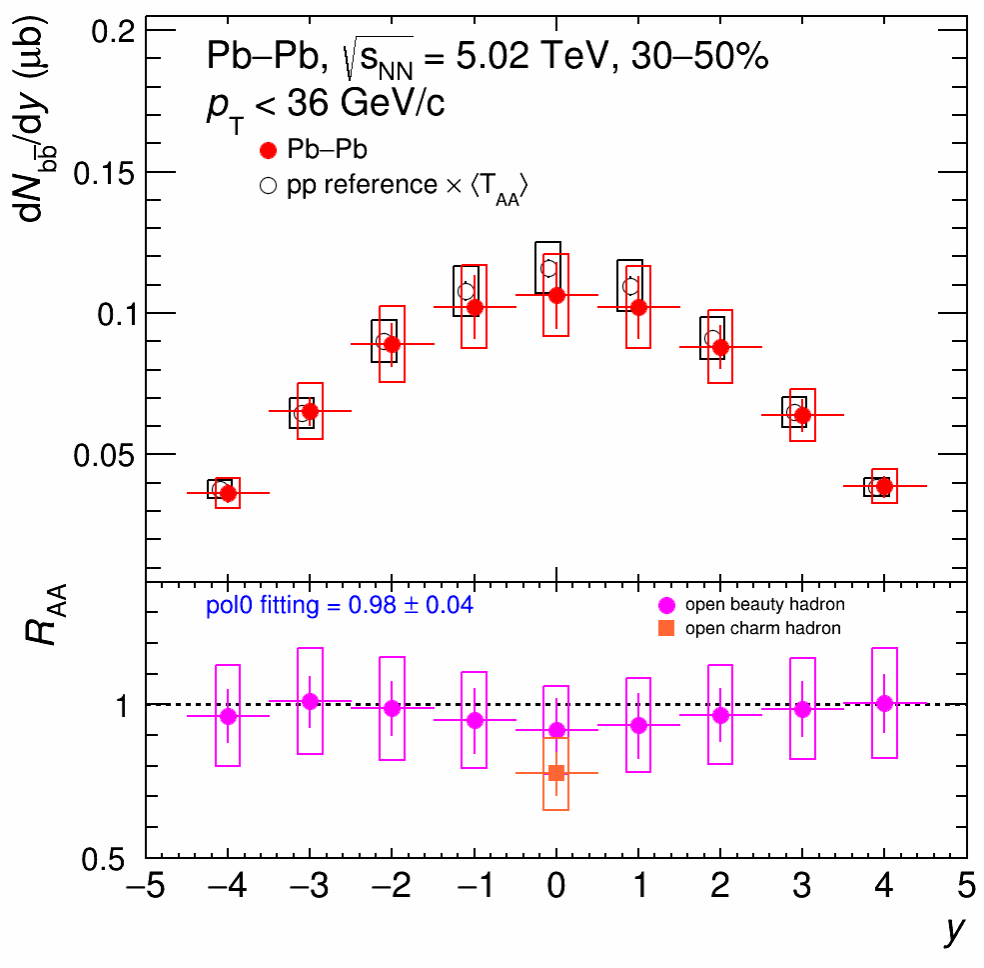
dN/dpTdy at mid-rapidity



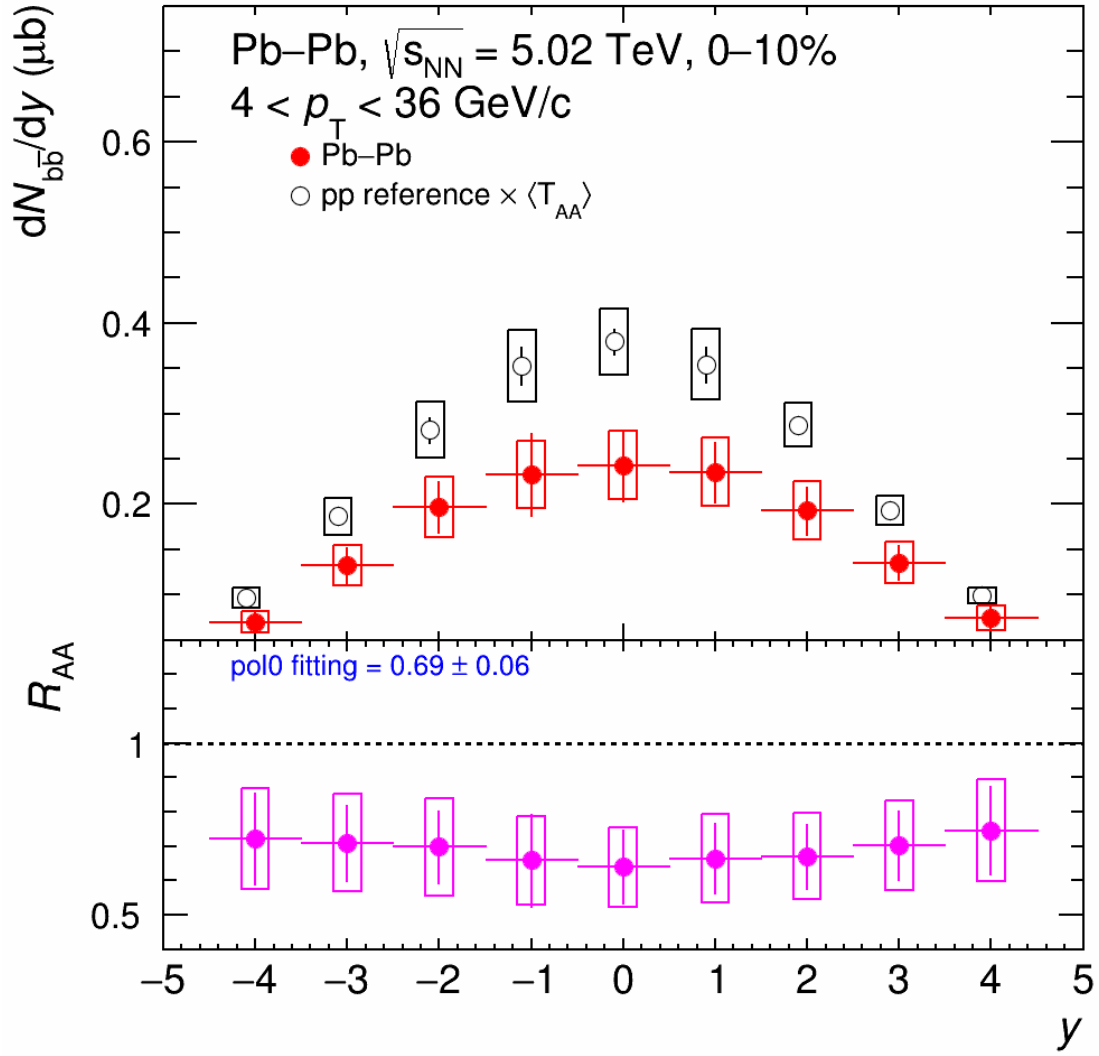


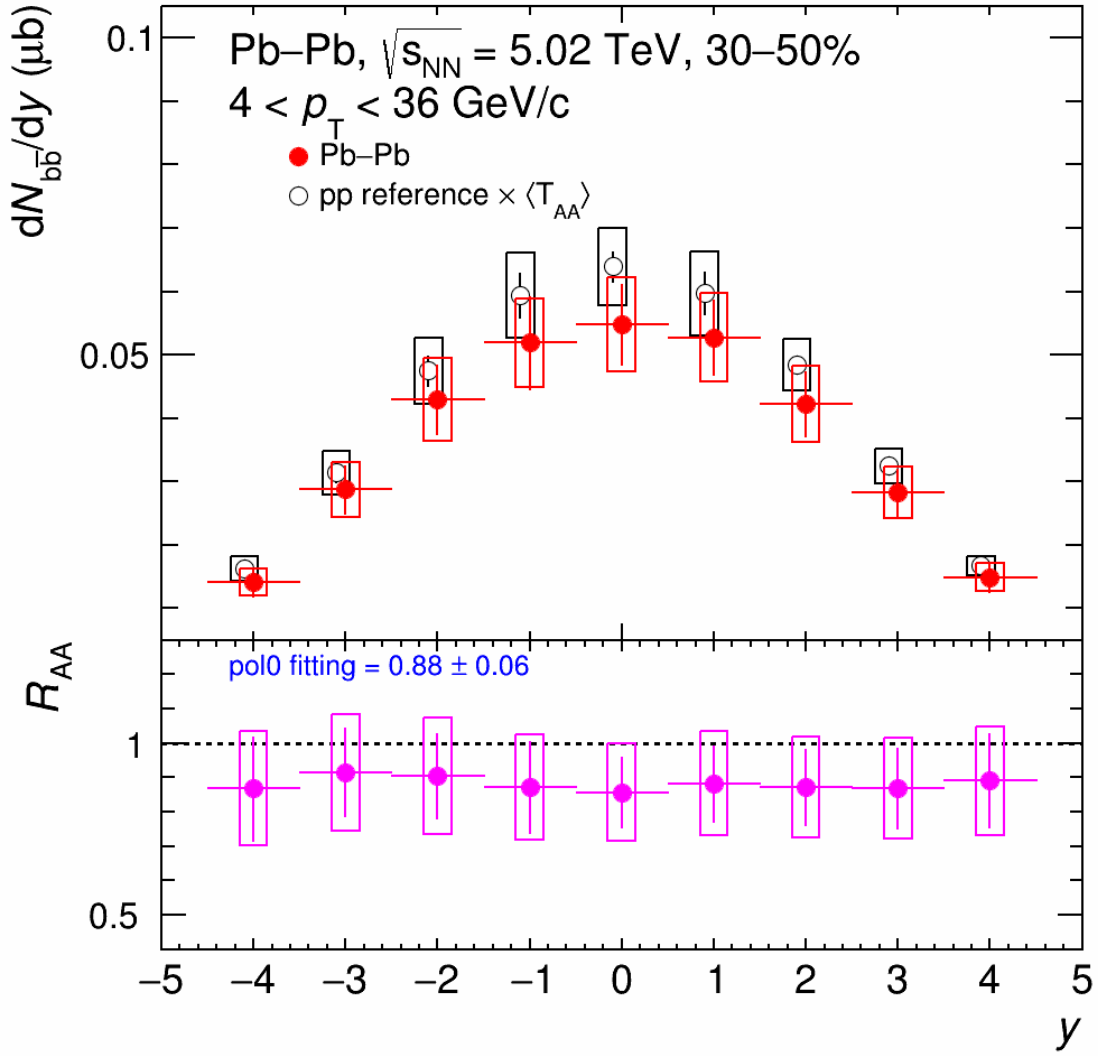
dN/dy


Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV, 0–10%
p_T < 36 GeV/c
Pb–Pb
pp reference × ⟨T_{AA}⟩
$dN_{b\bar{b}}/dy$ (μb)
R_{AA}
pol0 fitting = 0.88 ± 0.04
open beauty hadron
open charm hadron
y

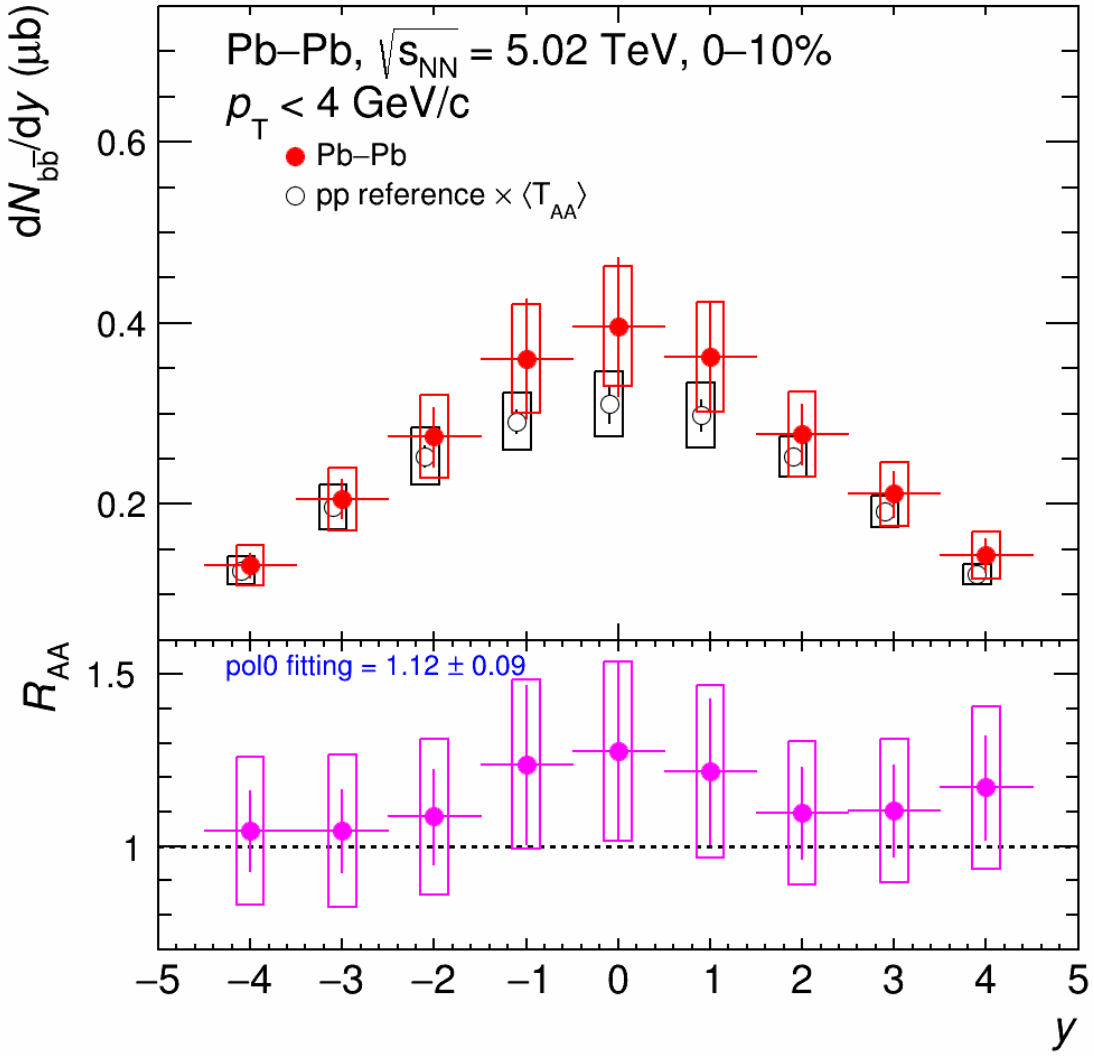

Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV, 30–50%
p_T < 36 GeV/c
Pb–Pb
pp reference × ⟨T_{AA}⟩
$dN_{b\bar{b}}/dy$ (μb)
R_{AA}
pol0 fitting = 0.98 ± 0.04
open beauty hadron
open charm hadron
y

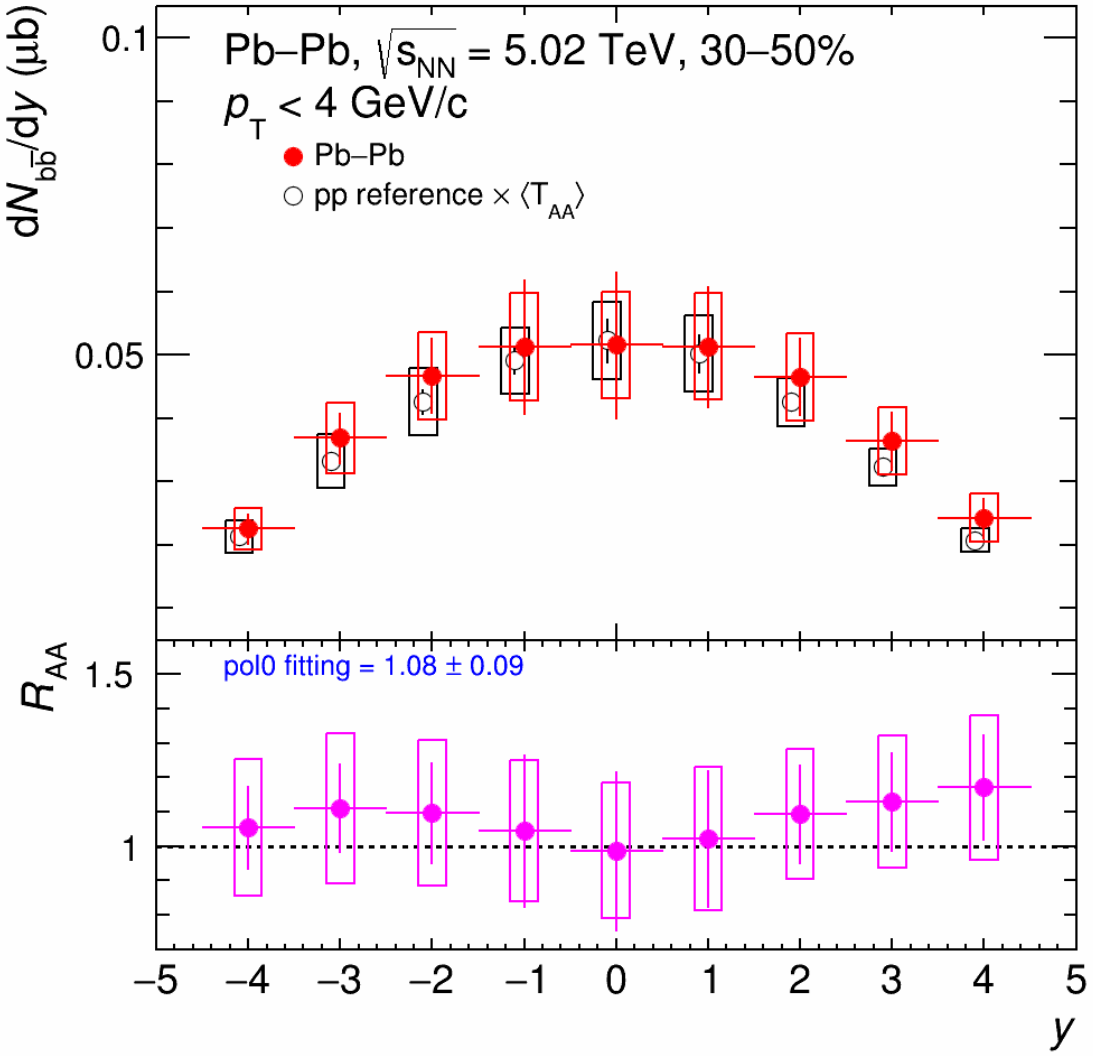
dN/dy at high-pT



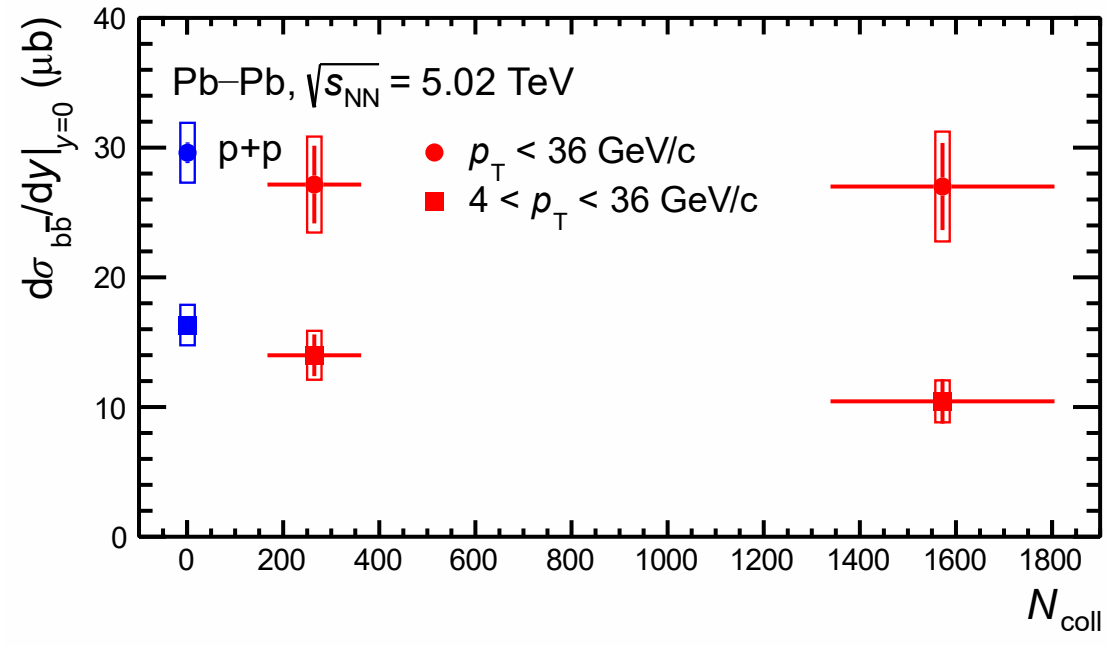


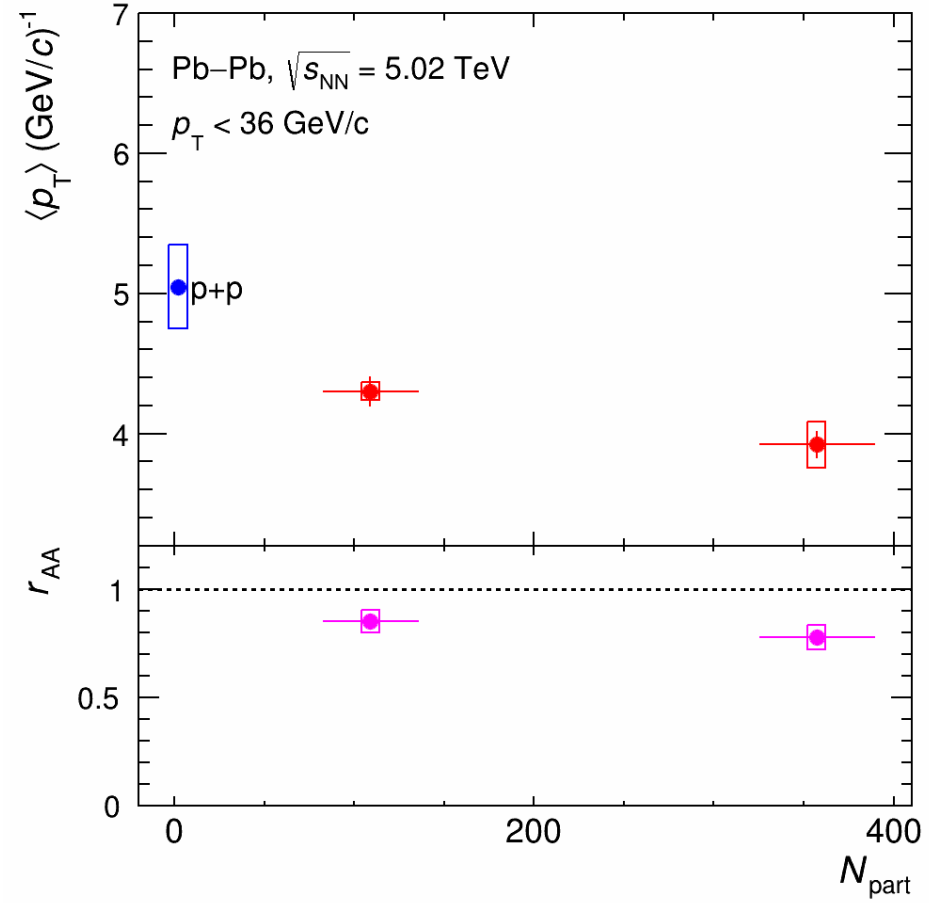
dN/dy at low-pT





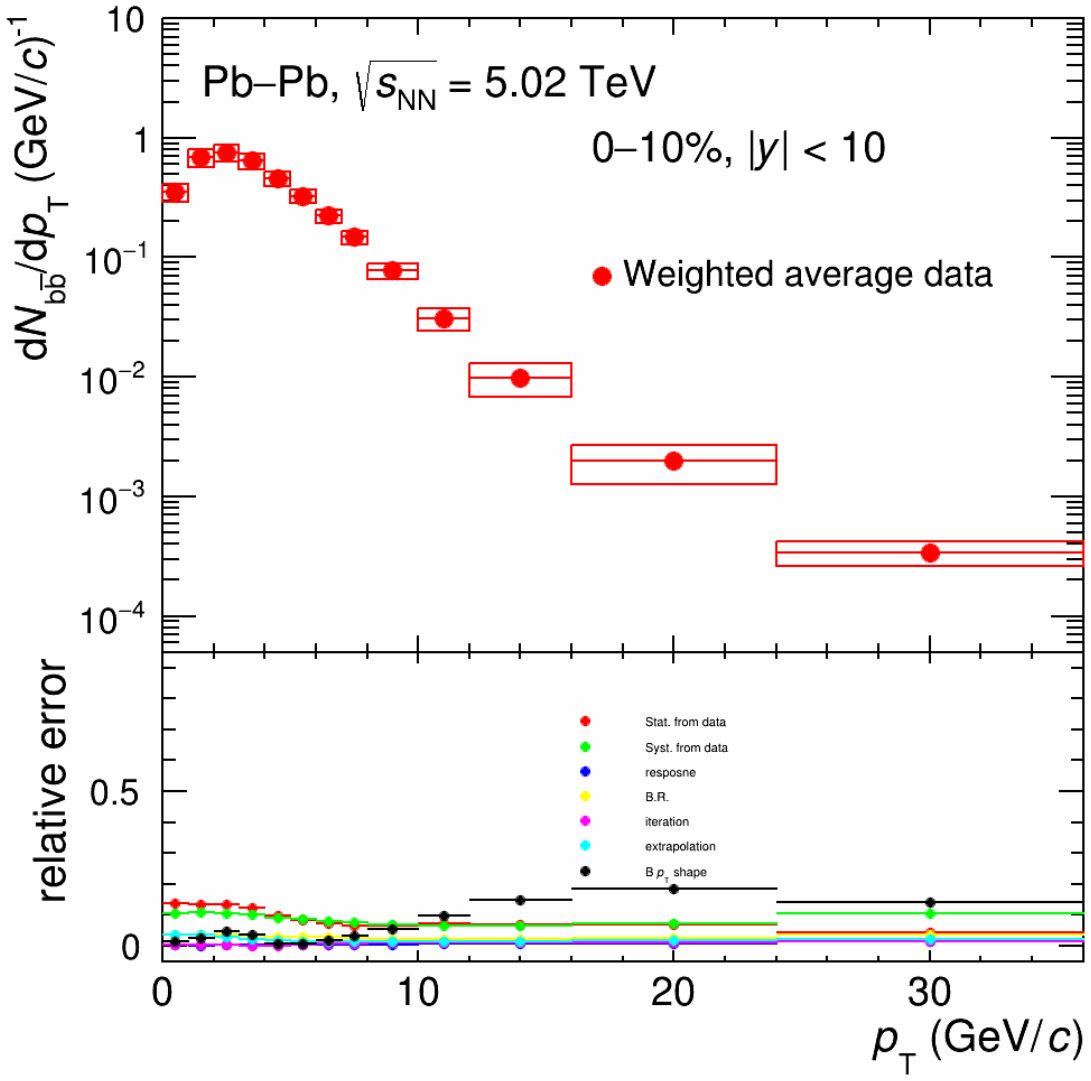
dN/dy vs Ncoll and mean-pT vs Npart

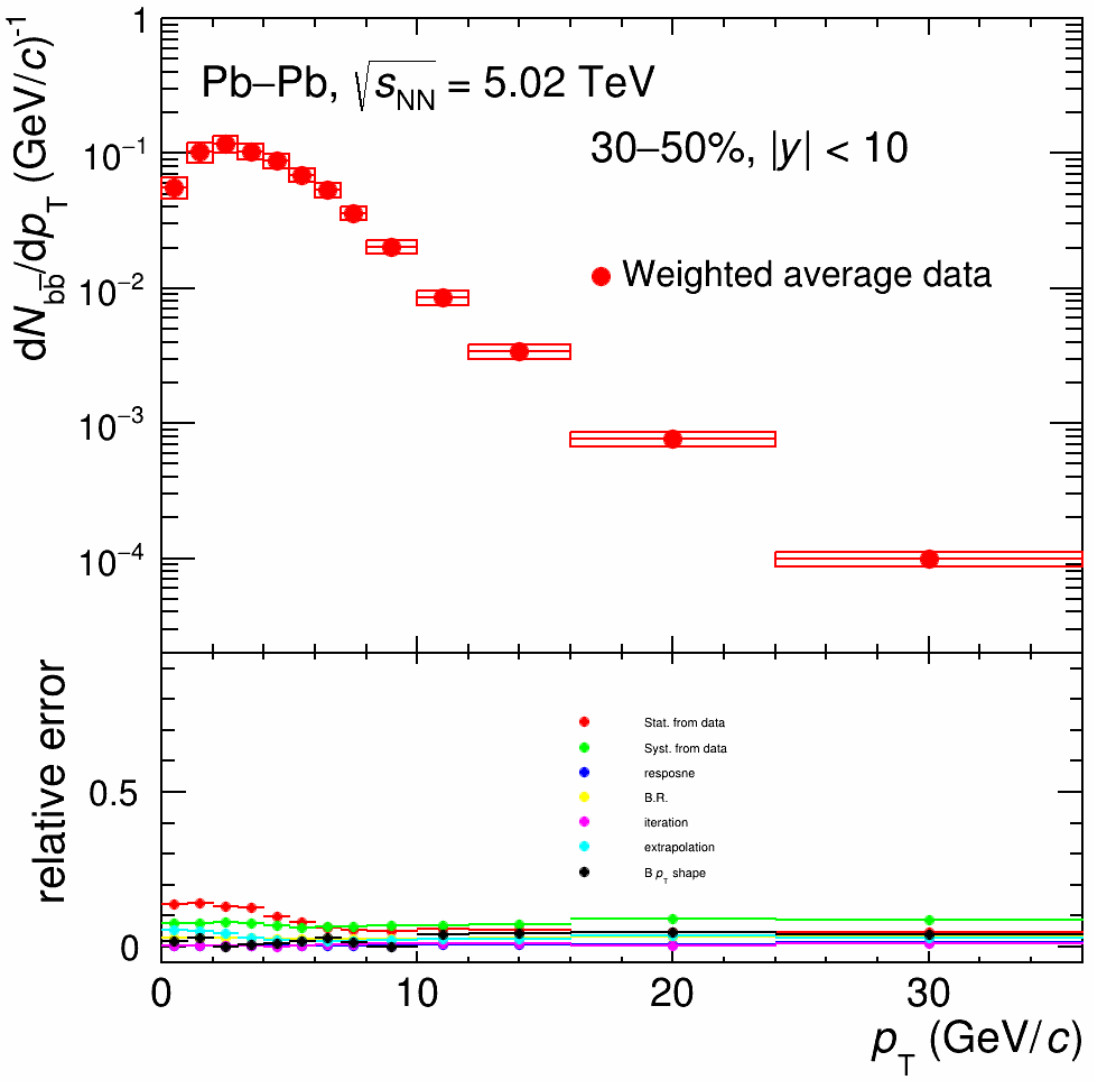




Back Up

dN/dpT at |y| < 10


Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV
0–10%, |y| < 10
Weighted average data
$dN_{b\bar{b}}/dp_T$ (GeV/c)$^{-1}$
relative error
Stat. from data
Syst. from data
resposne
B.R.
iteration
extrapolation
B p_T shape
p_T (GeV/c)


Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV
30–50%, |y| < 10
Weighted average data
$dN_{b\bar{b}}/dp_T$ (GeV/c)$^{-1}$
relative error
Stat. from data
Syst. from data
resposne
B.R.
iteration
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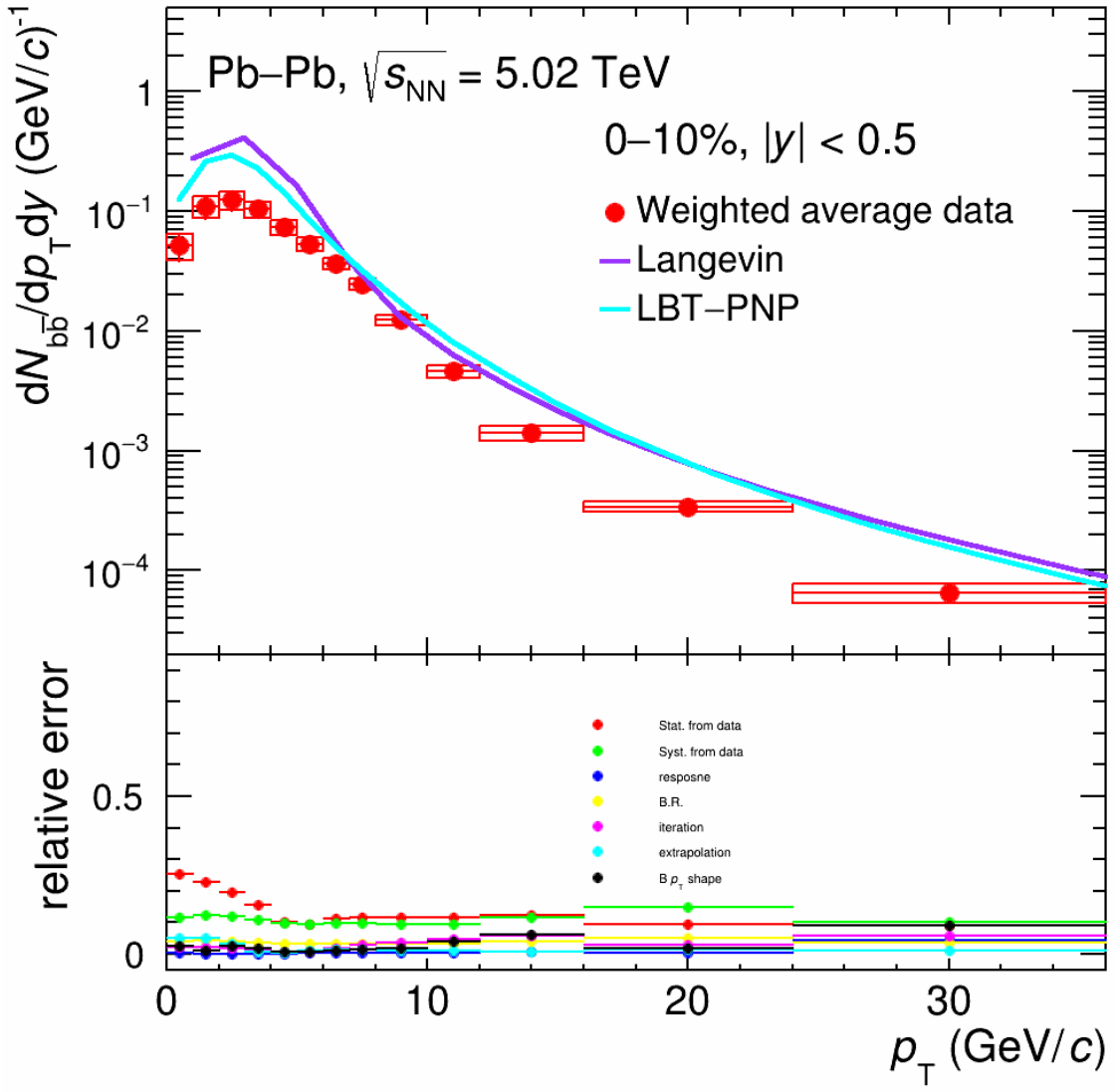
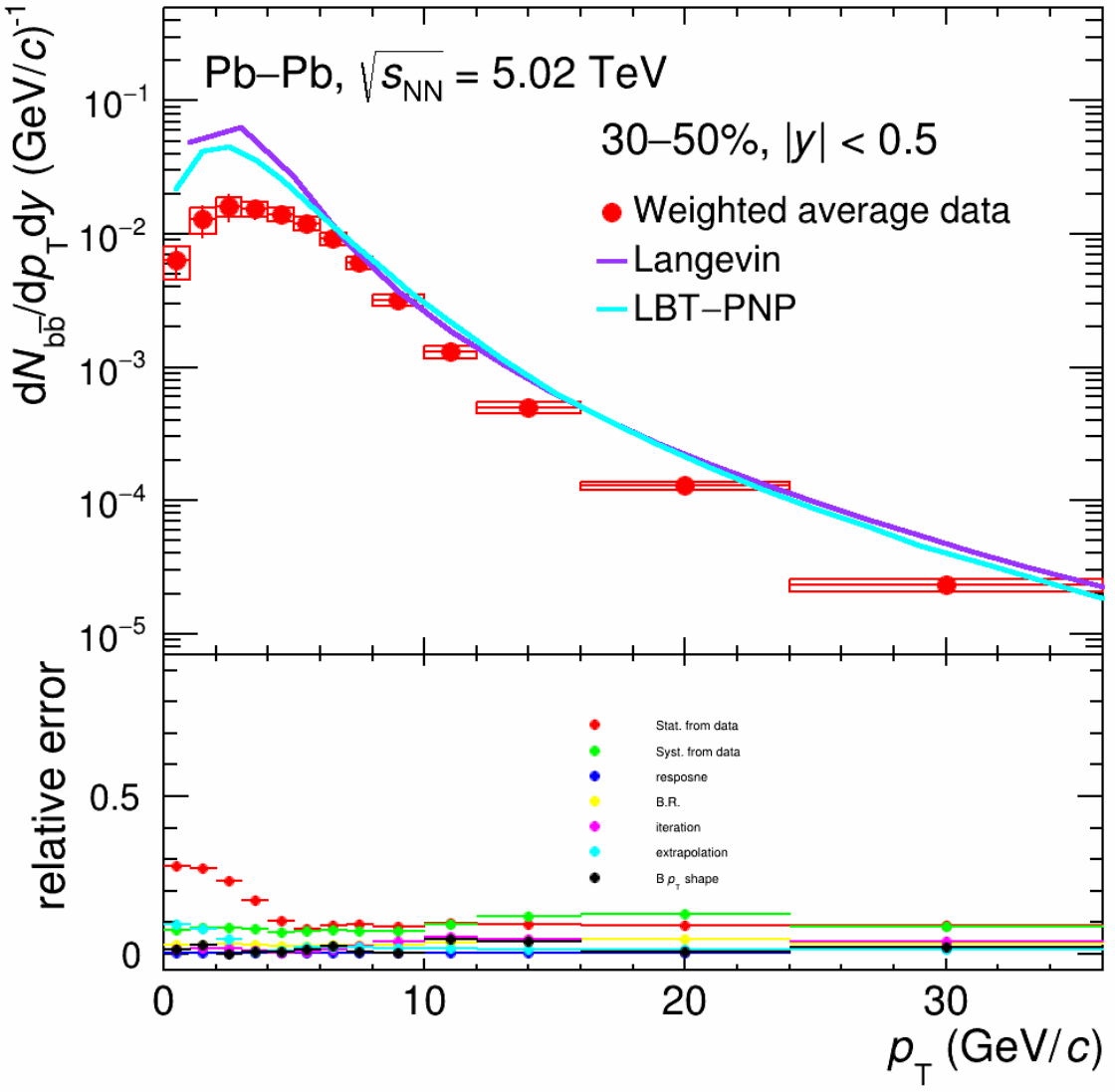
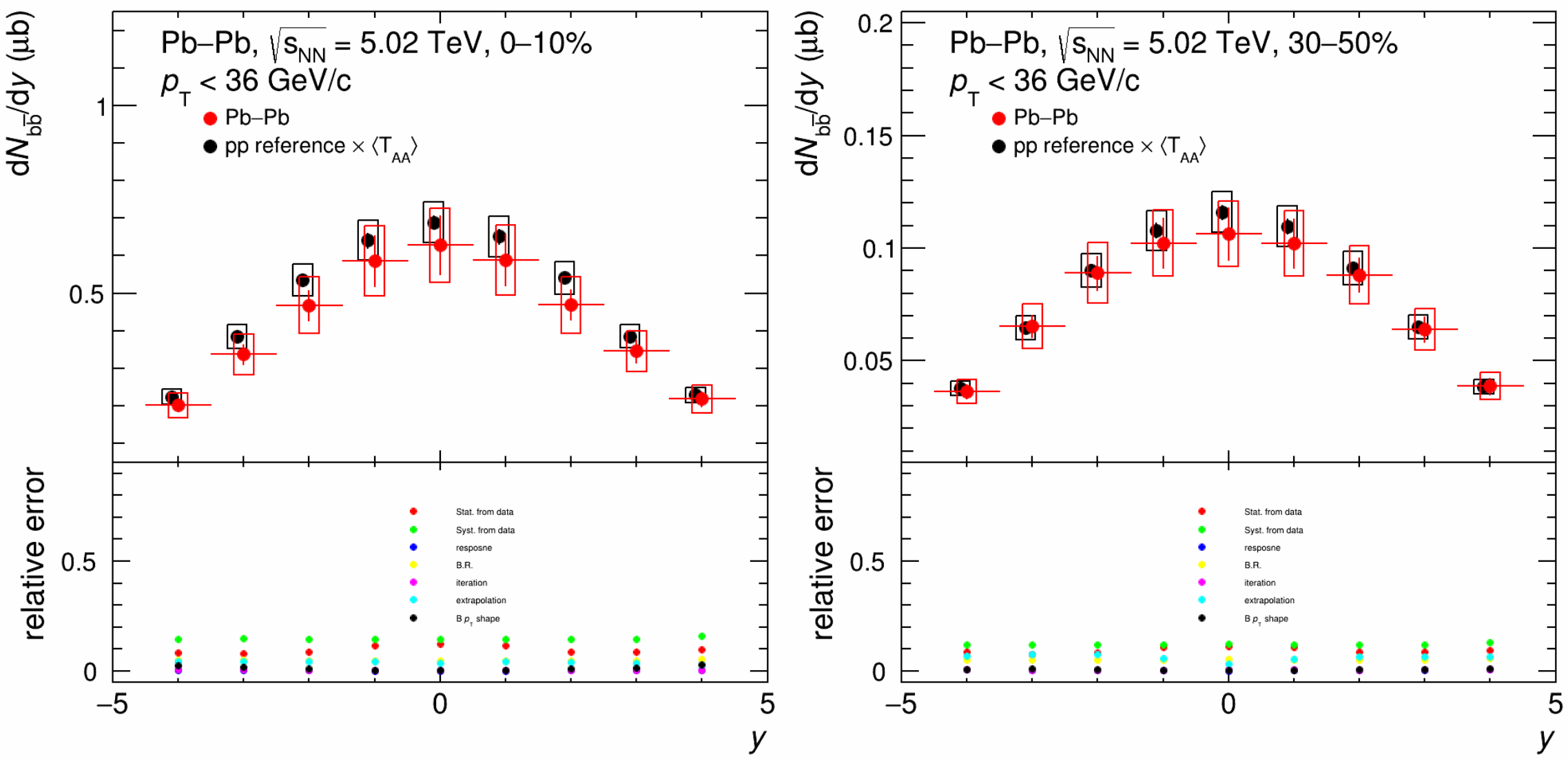
dN/dpTdy at mid-rapidity





dN/dy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p_T < 36 GeV/c
Pb–Pb
pp reference × ⟨T_{AA}⟩
$dN_{b\bar{b}}/dy$ (μb)
relative error
Stat. from data
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Pb–Pb, $\sqrt{s_{NN}}$ = 5.02 TeV, 30–50%
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$dN_{b\bar{b}}/dy$ (μb)
relative error
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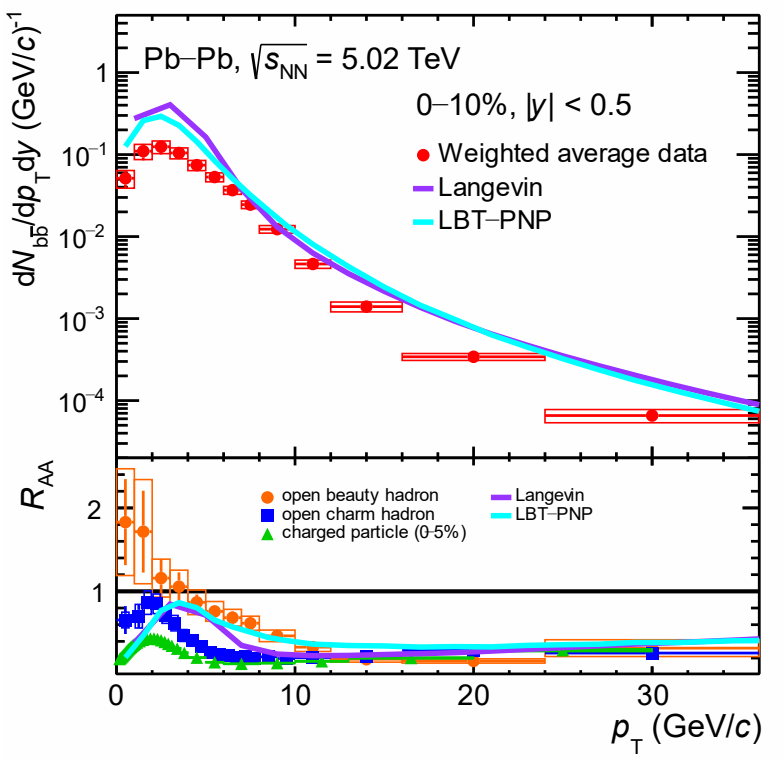

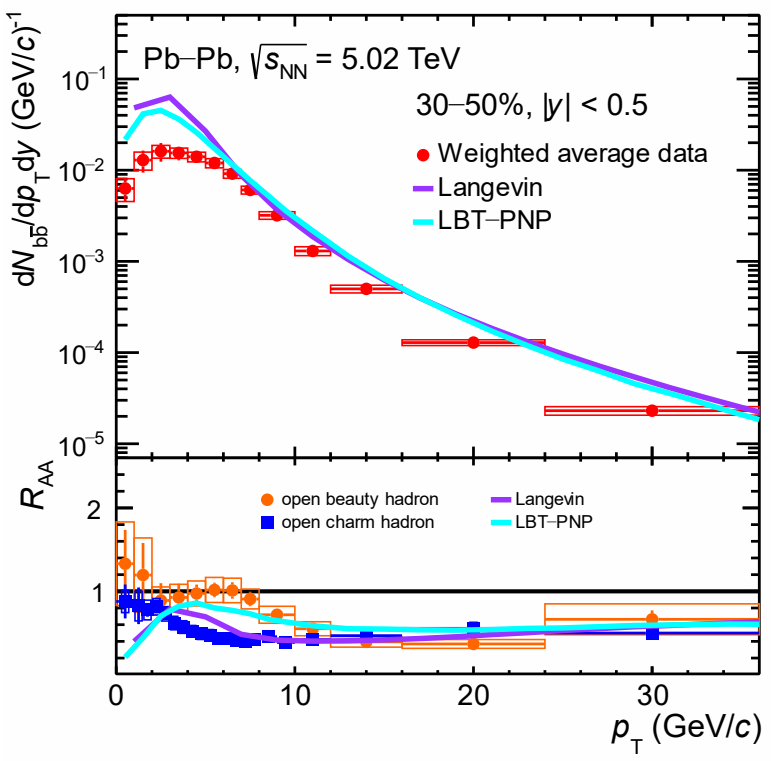

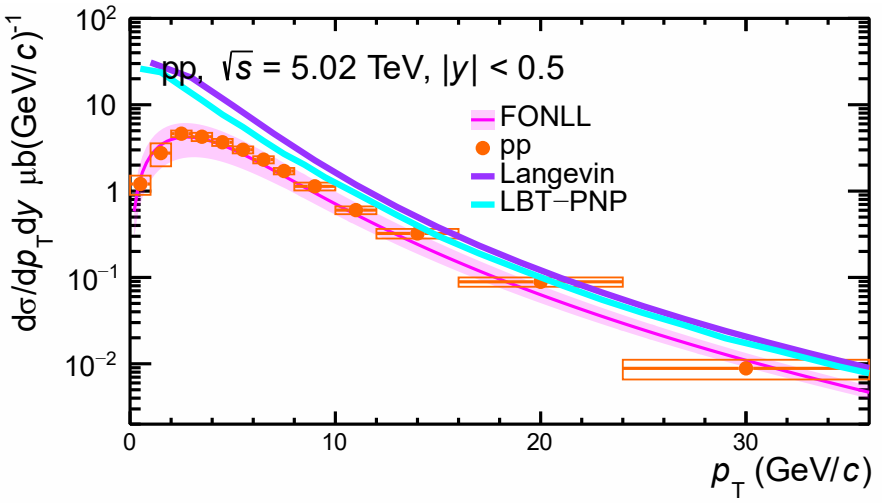

The Langevin and LBT–PNP calculation in p_T spectrum represents $\frac{dN}{dp_T}\Big|_{y=0}$ and $\frac{d\sigma}{dp_T}\Big|_{y=0}$, respectively.

$$\frac{d\sigma^{0-10\%}}{dp_{\mathrm{T}}} \Big/ R_{\mathrm{AA}}^{0-10\%} = \frac{d\sigma^{30-50\%}}{dp_{\mathrm{T}}} \Big/ R_{\mathrm{AA}}^{30-50\%} =? = \frac{d\sigma^{pp}}{dp_{\mathrm{T}}}$$