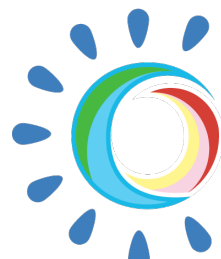


Measurement of medium effects on B^+ meson production $B^+ R_{pPb}$ in pPb collisions at LHC energies with the CMS detector

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B meson measurements in pPb collisions

Heavy flavours are probes for studying in-medium energy loss mechanisms:

→ B mesons allows to study flavour dependence of energy loss

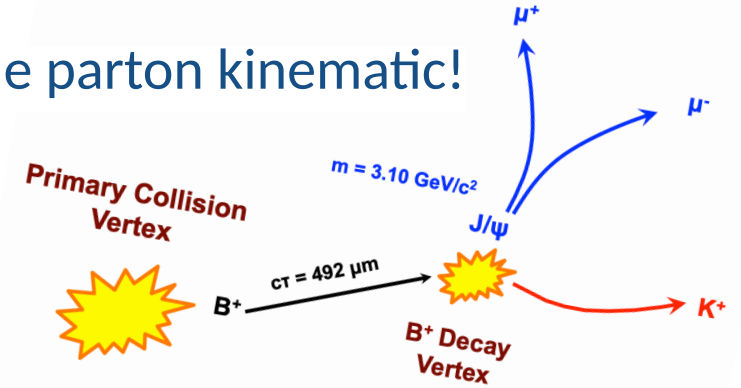
→ Exclusive B mesons can span the full range and get close to the parton kinematic!

Decay channels

$$B^+ \rightarrow J/\psi K^+ \rightarrow \mu^+ \mu^- K^+ \quad (\mathcal{B} = 6.12 \pm 0.19 \times 10^{-5})$$

$$B^0 \rightarrow J/\psi K^*(892) \rightarrow \mu^+ \mu^- K^+ \pi^- \quad (\mathcal{B} = 5.24 \pm 0.24 \times 10^{-5})$$

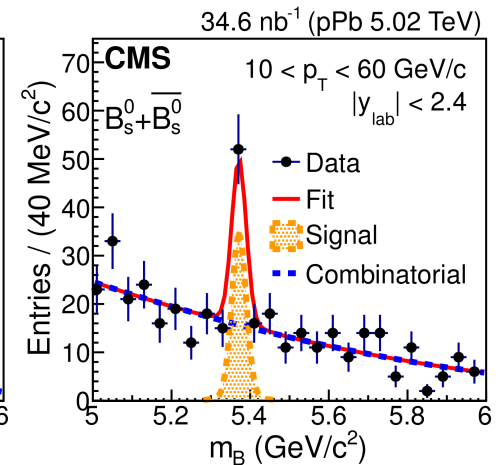
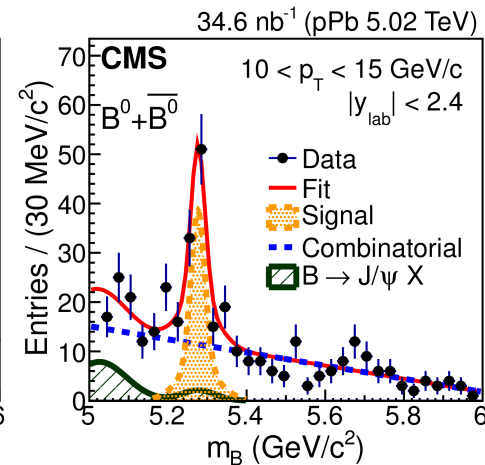
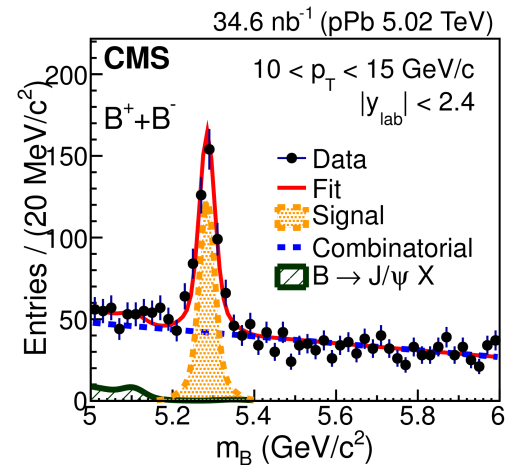
$$B_s^0 \rightarrow J/\psi \phi \rightarrow \mu^+ \mu^- K^+ K^- \quad (\mathcal{B}) = 3.12 \pm 0.27 \times 10^{-5}$$



Kinematic Selections:

→ B mesons are measured in a region $|y_{lab}| < 2.4$

→ Transverse momentum $10 < p_T < 60$

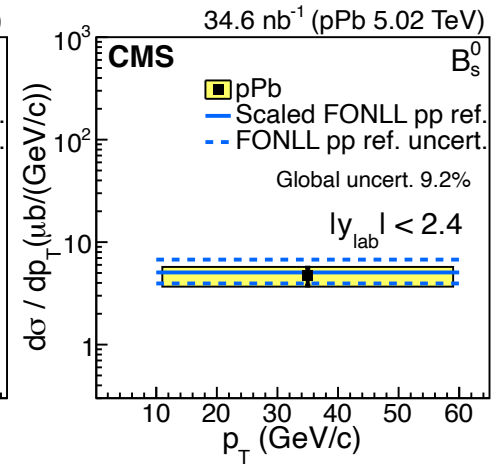
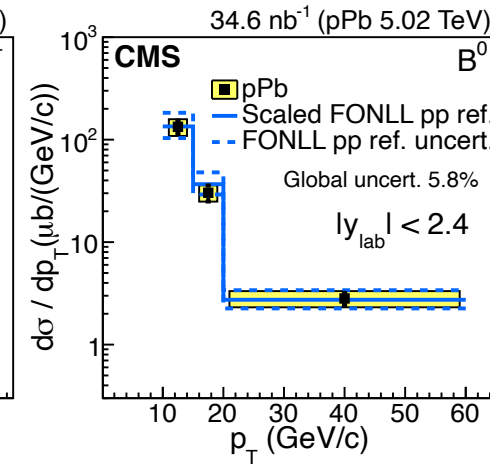
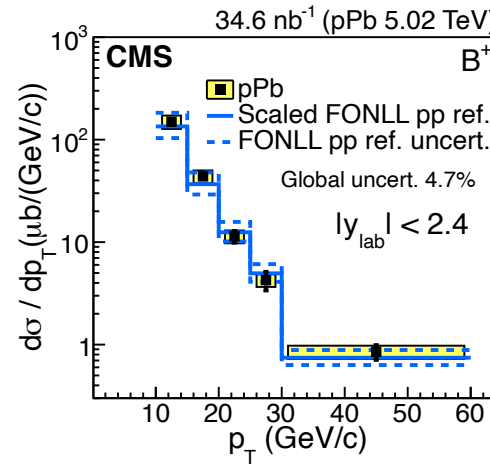


B meson production cross section and R_{pPb}

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B meson production cross section

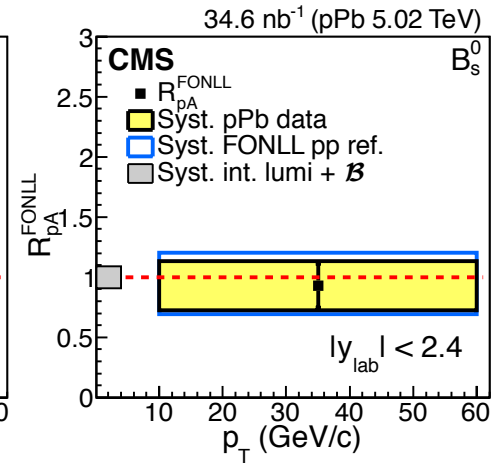
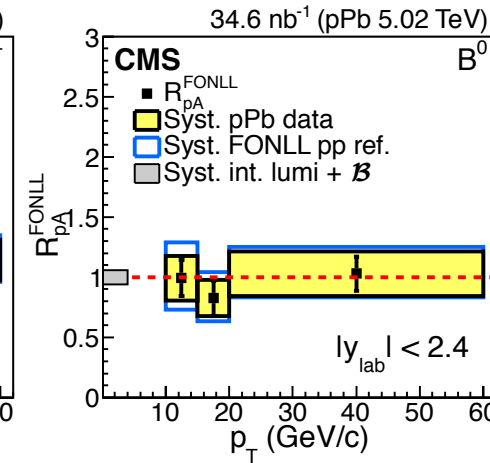
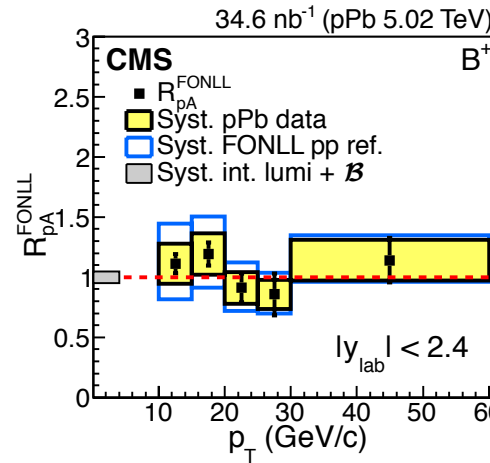
$$\left. \frac{d\sigma}{dp_T} \right|_{|y_{lab}| < 2.4} = \frac{1}{2} \frac{1}{\Delta p_T} \frac{N(p_T)|_{|y_{lab}| < 2.4}}{(Acc\epsilon)|_{|y_{lab}| < 2.4} \mathcal{B}\mathcal{L}}$$



Nuclear Modification Factor:

$$R_{p+A}^{FONLL} = \frac{(\frac{d\sigma}{dp_T})_{p+Pb}}{A(\frac{d\sigma}{dp_T})_{pp}}$$

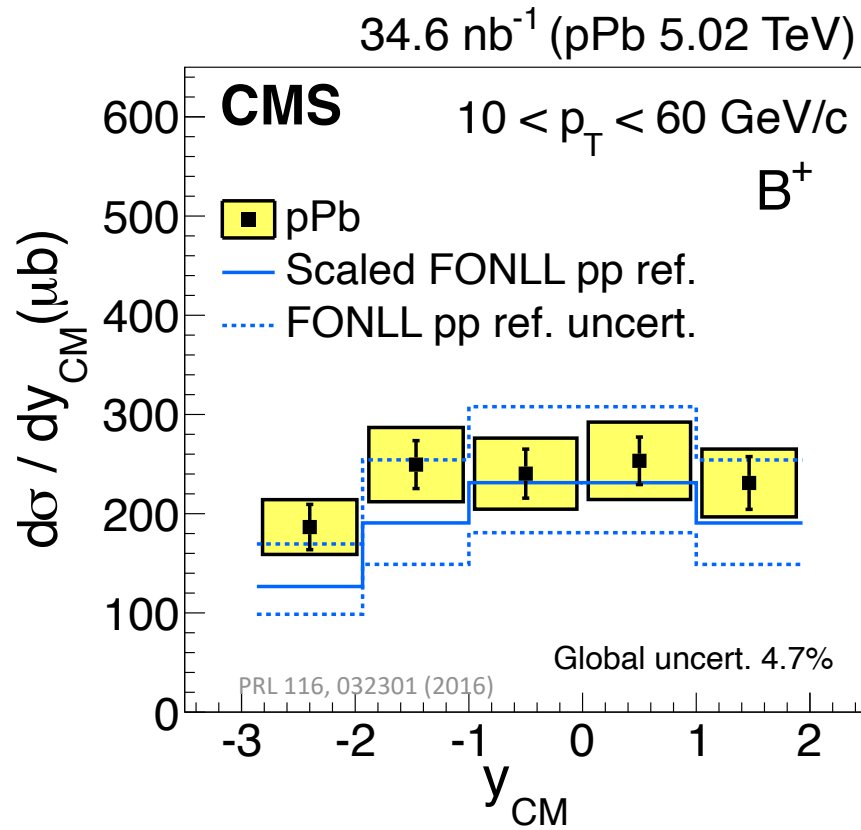
The nuclear modification factors of the three B mesons do not show evidence for modification of pPb data compared to the FONLL reference, in the considered p_T range within the quoted uncertainties.



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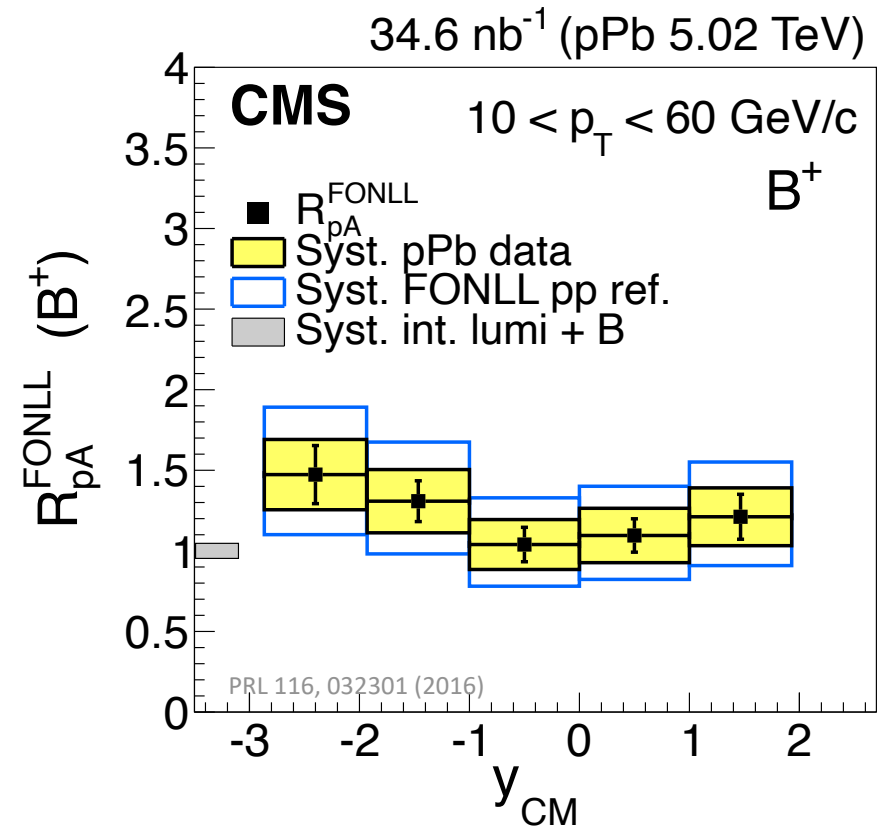
Rapidity dependence of B^+ meson production cross section and R_{pPb}

B^+ meson production cross section



The y_{CM} -differential cross section of B^+ in the interval $10 < p_T < 60$ GeV/c as a function of rapidity.

B^+ R_{pPb}



No strong evidence of rapidity dependence of nuclear modification factor is observed within the uncertainties.

Summary

Measurements of the B^+ , B^0 , and B^0_s meson production cross sections in p+Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV.

The mesons are measured in $y_{lab} < 2.4$ and $10 < p_T < 60$ GeV/c via the reconstruction of their exclusive hadronic decay channels.

No significant modifications are observed, considering the statistical and systematical uncertainties,

Results were compared to pp FONLL calculations scaled by the number of incoherent nucleon-nucleon collision.

Thank you