



Contribution ID: 11

Type: Regular Talk (15'+5')

## Measurement of the $B^+$ differential cross section as a function of transverse momentum and multiplicity density in pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV

Friday 2 December 2022 11:35 (20 minutes)

We present the first observation of the  $B^+$  meson production suppression in high-multiplicity respect to low multiplicity pPb collisions at  $\sqrt{s_{NN}} = 8.16$  TeV with data collected by the CMS detector during 2016 and corresponding to an integrated luminosity of  $175 \text{ nb}^{-1}$ . The measurement uses exclusive decay channel  $B^+ \rightarrow J/\psi K^+$ . The inclusive results show a good agreement with theoretical calculations from the FONLL within uncertainties. The cross section ratio measurements scaled by the charged-particle multiplicity density, from low to high multiplicity, shows a significant decrease on the  $p_T$  dependence with increasing charged-particle multiplicity density. Results may indicate interplays of beauty quark energy loss, diffusion effects models in high multiplicity events, and gluon saturation models in lower multiplicity events.

**Authors:** TORRES CASTANO, Camilo Jose (Universidad de Antioquia (CO)); MEJIA GUIAO, Jhovanny Andres (Universidad de Antioquia (CO))

**Presenter:** TORRES CASTANO, Camilo Jose (Universidad de Antioquia (CO))

**Session Classification:** QCD and Heavy Flavours

**Track Classification:** LHC-1