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Type: Oral Presentation

Probing QCD medium effects in pPb collisions via the multiplicity dependence of J/ψ and $\psi(2S)$ production with the CMS experiment

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Evidence for collectivity and effects beyond nPDF modifications and energy loss in small systems has been observed in recent years. In high-multiplicity pPb events, J/ψ is found to show a surprisingly large long-range elliptic anisotropy signal, comparable to that for light and open-heavy flavor hadrons. In addition, results on prompt J/ψ and $\psi(2S)$ production in pPb data at 5.02 TeV exhibit a different modification of the ground and excited state, especially in the Pb-going direction, hinting to a possible breakup of the weaker bound excited states from interactions with final state particles. To better understand the production mechanism of charmonia in small systems as well as the importance of final-state effects, the multiplicity dependence of J/ψ and $\psi(2S)$ production yields and forward-backward asymmetries in pPb collisions at 8.16 TeV using full LHC run 2 statistics have been studied, and the results will be presented in this talk.

Collaboration (if applicable)

CMS

Track

Heavy Flavor and Quarkonia

Contribution type

Contributed Talk

Primary author: PETRUSHANKO, Serguei (M.V. Lomonosov Moscow State University (RU))

Presenter: ZHANG, Yousen (Rice University (US))

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