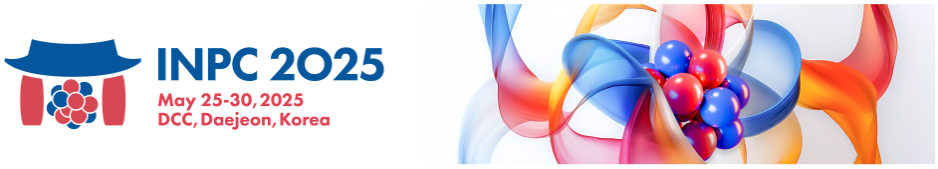

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Measurement of χ_c production in pPb collisions with CMS

The nuclear modification of quarkonium production serves as crucial evidence for the deconfined QCD medium production in nuclear collisions. This modification is shaped not only by medium-induced dissociation but also by a variety of initial- and final-state effects. The production of excited charmonium states in pPb collisions presents a controlled setting to further investigate these phenomena. Specifically, the production of χ_c mesons offers critical insights into feed-down contributions and the dependence of charmonium behavior on binding energy, as their masses lie between those of the ground state and $\psi(2S)$.

In this presentation, we share our studies on the production of χ_c mesons in pPb collisions with the CMS experiment. We report the relative production rates of $\chi_{c1,2}$ compared to J/ψ. Our analysis evaluates cross-section ratios as functions of transverse momentum, rapidity, and event activity. These results are compared with other measurements conducted at the LHC and with theoretical predictions, providing a deeper understanding of χ_c production mechanisms in nuclear collisions.

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