



Contribution ID: 227

Type: **Parallel Talk**

Study of charm quark diffusion with jet- D^0 angular correlation in heavy ion collisions with CMS

Thursday, 7 July 2022 14:45 (15 minutes)

We report the first measurement of the azimuthal angular correlation between jets and D^0 mesons in pp and PbPb collisions. The measurement is performed using jets with $p_T > 60$ GeV and D^0 mesons with $p_T > 4$ GeV. The azimuthal angle difference between jets and D^0 mesons ($0 < \Delta\phi < \pi$) is sensitive to medium-induced charm diffusion, charm quark energy loss, and possible rare large-angle scattering between charm and the quasi-particles in QGP. We also report the radial profile of the charm quark with respect to the jet axis measured differentially in centrality and $D^0 p_T$. This analysis is performed with high-statistics Run 2 data collected by the CMS detector.

In-person participation

Yes

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