The 22nd International Conference on
Strangeness in Quark Matter
22-27 March, 2026, Los Angeles, CA

Contribution ID: **129** Type: **Poster Presentation**

Xic0 production as a function of multiplicity by XicZeroToPiXi in pp collision at $\sqrt{s} = 13.6$ TeV with ALICE

Tuesday, 24 March 2026 19:11 (1 minute)

Heavy quarks, such as charm and beauty, are produced in hard-scattering processes occurring in the early stages of the collisions at the LHC. Therefore, the production of heavy-flavour hadrons in proton–proton (pp) collisions provide an important test of quantum chromodynamics (QCD). A significant enhancement of the \Lambdac/\Dzero\ production yield ratio was observed in pp collisions compared to low multiplicity electron–positron and electron–proton collisions, challenging the conventional assumption of fragmentation universality. Furthermore, the baryon-to-meson \pt-differential \Lambdac/\Dzero\ ratio shows a multiplicity-dependent enhancement. The \Xiczeroplus/\Dzero\ and \Xiczeroplus/\Lambdac\ were also measured during LHC Run 2 by ALICE. However, no significant multiplicity dependence was observed due to the limited precision. To further provide experimental constraints for such a new hadronisation mechanism, the current measurement can be improved by exploiting the large data sample of \pp\ collisions at \thirteensix\ during the Run˜3. In this contribution, a more precise production yield of \Xiczero\ baryons as a function of charged-particle multiplicity at midrapidity in pp collisions at \thirteensix\ will be presented.

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Session Classification: Poster Session