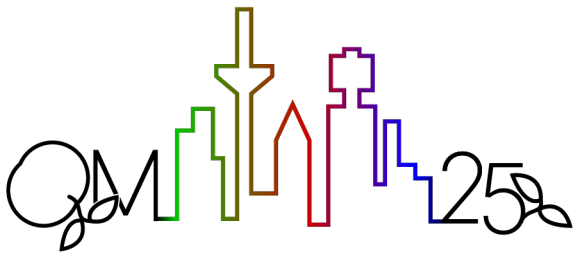

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ALICE charming take on strangeness enhancement in pp collisions

Tuesday 8 April 2025 16:50 (20 minutes)

Understanding strangeness enhancement in proton-proton (pp) collisions at the LHC remains a challenge for hadronization models. Recent observations of the Ω_c^0 baryon indicate that a substantial fraction of the detected Ω baryons may originate from the decay of charm hadrons, e.g. from $\Omega_c^0 \rightarrow \Omega^- + \pi^+$. However, the unknown absolute branching ratios prevent an exact estimation of the contribution of Ω baryons coming from charm-hadron decays.

In this talk, we present the first measurement of the fraction of Ω baryons originating from charm-hadron decays in pp collisions at $\sqrt{s} = 13.6$ TeV, performed by the ALICE collaboration. This result is enabled by ALICE's new silicon Inner Tracking System, which allows the direct tracking of the Ω baryon prior to its decay. By studying the evolution of the fraction of Ω coming from charm hadrons as a function of charged-particle multiplicity, we will explore the role of charm-hadron production as a driver of strangeness enhancement.

Category

Experiment

Collaboration (if applicable)

ALICE

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