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Investigating strangeness production in pp collisions as a function of charged-particle multiplicity and effective energy with ALICE

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Studying the energy and multiplicity dependence of strange hadron production in pp collisions provides a powerful tool for understanding similarities and differences between small and large collision systems. The charged-particle multiplicity is an important characteristic of the hadronic final state of a pp interaction, but it also reflects the initial dynamics of the collision being strongly correlated with the energy effectively available for particle production in its initial stages (effective energy).

A new multi-differential analysis is performed to separate initial and final state effects on strangeness production in small collision systems. The production of (multi)strange hadrons is studied in pp collisions at $\sqrt{s}$ = 13 TeV as a function of the charged-particle multiplicity measured at midrapidity and the forward energy detected by ALICE Zero Degree Calorimeters.

The results provide new insights into the role of initial state effects on strangeness production.

In-person participation

Yes

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