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Exploring the transverse momentum fraction of leading strange hadrons in mini-jets in pp collisions at $\sqrt{s} = 13$ TeV with ALICE

An enhancement of the strange baryon-to-meson yield ratio has been observed by ALICE for intermediate transverse momentum (p_T) at high multiplicity from small to large colliding systems. This enhancement is possibly due to the effects of collective radial flow and recombination of quarks. However, there is ongoing debate regarding whether jet fragmentation could also play a role, as strange particles in the enhanced region may originate from low-energy partons. The fragmentation properties can be investigated from the measurement of the energy fraction of strange particles within their original partons.

In this poster, measurement of the mean p_T fractions of leading K_S^0 mesons and Λ ($\bar{\Lambda}$) baryons in mini-jets (leading- $\langle z \rangle$) as a function of p_T in pp collisions at $\sqrt{s} = 13$ TeV is presented, using a new correlation method. Comparisons with PYTHIA8 and AMPT models with the string-melting implementation will be reported as well. Finally, we will discuss the prospects for multi-strange hadrons and the dependence of leading- $\langle z \rangle$ on charged-particle multiplicity in LHC Run 3.

Category

Experiment

Collaboration (if applicable)

ALICE

Author: XU, Lang (Central China Normal University CCNU (CN))

Presenter: XU, Lang (Central China Normal University CCNU (CN))

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