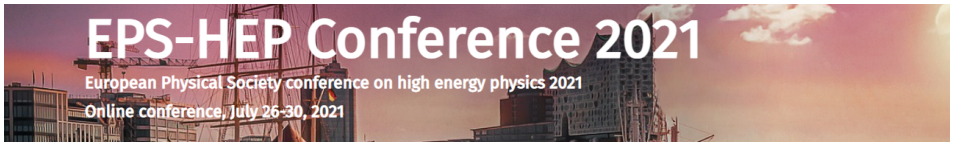

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Understanding baryon and strangeness production using two-particle angular correlations in pp collisions from ALICE

Correlations between identified particles produced in high-energy nuclear collisions provide a wealth of information about hadronization mechanisms and the evolution of the system. New correlation measurements between long-lived particles (including π, K, p, Λ,Ξ) are used to investigate the particle production and the species dependence of (mini)jet fragmentation. The string/rope model predicts that strangeness is produced in ss pair breaking, therefore, correlations between strange and anti-strange hadrons are expected, and studies of these correlations can provide information on strangeness production mechanisms. In this talk we present measurements of $\Xi-\pi$, $\Xi-$K, $\Xi-$p, $\Xi-\Lambda$, and $\Xi-\Xi$ angular correlations in pp collisions at $\sqrt{s} = 13$ TeV as a function of multiplicity, and discuss the implications for this unique probe on the understanding of strangeness production mechanisms. Furthermore, in previous measurements in pp collisions at $\sqrt{s} = 7$ TeV we observed that correlations between baryons show qualitatively different behavior than those of mesons, and the origin of this difference is still unknown. We will show new results on π, K, p, and Λ correlations from $\sqrt{s} = 13$ TeV pp collisions, which present a challenge to the contemporary models of particle production in elementary systems.

Collaboration / Activity

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