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Type: Poster

Study of the effect of mass on the baryon correlation puzzle using the ALICE experiment

The angular correlation function is a key tool in the study of hadronization mechanisms. Several effects influence these functions, including quantum statistics, final state interactions, energy and momentum conservation, resonance decays and the quark composition of the interacting particles. This serves as a powerful tool for checking the validity of the theoretical models.

\newline

This analysis extends previous studies that revealed unexplained anticorrelations in like-sign baryon pairs, such as $pp + \bar{p}\bar{p}$ and $p\Lambda + \bar{p}\bar{\Lambda}$. By comparing the pp and $p\phi$ meson angular correlation functions from pp collisions at $\sqrt{s} = 13.6\text{TeV}$ recorded by the ALICE experiment, it will be tested whether this effect could be exclusively baryonic in nature. Preliminary results and their implications for the understanding of hadronization mechanisms will be presented, along with a discussion of how these results contribute to resolving longstanding questions regarding the baryon correlation puzzle.

Category

Experiment

Collaboration (if applicable)

ALICE

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