

Two-particle angular correlations of identified particles in pp collisions at $\sqrt{s} = 13$ TeV with ALICE

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Two-particle angular correlation is one of the most powerful tools to study the mechanism of particle production in pp collision systems by relating the difference between the azimuthal angle ($\Delta\varphi$) and the rapidity (Δy) of a pair of particles. Hadronization processes are influenced by various physical phenomena, such as resonance decays, Coulomb interactions, laws of conservation of energy and momentum, and others, because of the quark content of the particles involved. Therefore, each correlation function is unique and shows a different dependence on p_T and/or multiplicity. The angular correlation functions reported by the ALICE collaboration in pp collisions showed for baryon pairs an anti-correlation in short intervals of ($\Delta y \Delta\varphi$), which is not predicted by any theoretical model.

In this contribution, we investigate this behavior by studying combinations of identified charged particles (i.e., π^\pm , K^\pm and $p(\bar{p})$) in the $\Delta y \Delta\varphi$ space in pp collisions at $\sqrt{s} = 13$ TeV by ALICE. In addition, to distinguish the various physical contributions, collisions with different multiplicities are analyzed separately and diverse normalization methods are applied.

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