

Momentum kick model with multiplicity dependence in pp collisions and p-Pb collisions

Wednesday 27 August 2025 19:42 (12 minutes)

The long-range near-side ridge phenomenon in two-particle correlation($\Delta\phi$ - $\Delta\eta$) is one of powerful tools in exploring strong interaction. Although the hydrodynamic model describes this ridge structure in heavy ion collisions, this could not offer the explanation that ridge phenomenon occurs in the small systems such as pp collisions and p-Pb collisions because density and temperature are not enough to generate a hydrodynamic medium. The Momentum Kick Model (MKM) explains this effect via high-momentum jet particles transferring momentum to medium partons, inducing collective motion. We extend MKM to momentum kick model with multiplicity dependence (MKMwM), which is the MKM considering the average number of kicked partons with an impact parameter, using new experimental data to analyze and predict ridge structures in pp collisions and p-Pb collisions at the LHC.

Research field of your presentation

Theoretical high-energy nuclear physics

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Session Classification: Young Scietist Session 5 (Poster)