

Event activity-dependence of jet production in p–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV measured with semi-inclusive hadron+jet correlations by ALICE

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We report measurement of the semi-inclusive distribution of charged-particle jets recoiling from a high transverse momentum (p_T) hadron trigger, for p–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV that have been classified by event activity. This coincidence observable is calculable perturbatively in vacuum, and has previously been measured in pp and Pb–Pb collisions at the LHC, providing a new probe to measure quenching. Jets are reconstructed from charged particle tracks using the anti-kT algorithm with low IR cutoff of jet constituents ($p_T^{track} > 0.2$ GeV/c). The analysis applies a data-driven statistical approach to correct the complex uncorrelated jet background, including multi-partonic interactions. Recoil jet distributions are reported for $15 < p_{Tjet} < 50$ GeV/c, for $R=0.2$ and 0.4 . Events are classified by signal in the ALICE V0A detector, which measures forward multiplicity, and ZNA, which measures the number of neutrons at zero degrees. The semi-inclusive observable corresponds to the ratio of inclusive cross sections, $d\sigma^{h_{trig}+jet}/\sigma^{h_{trig}}$, and comparison of the recoil jet yield in p–Pb collisions with different event activity therefore does not require knowledge of T_{pPb} , thereby avoiding the need for geometric modelling. We compare the trigger-normalized recoil jet yield for p–Pb collisions with different event activity to measure the effects of jet quenching in small systems at the LHC.

Preferred Track

Jets and High p_T Hadrons

Collaboration

ALICE

Primary author: KRIZEK, Filip (Acad. of Sciences of the Czech Rep. (CZ))

Presenter: KRIZEK, Filip (Acad. of Sciences of the Czech Rep. (CZ))

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