

Measurements of jet quenching using semi-inclusive hadron+jet distributions in pp and central Pb–Pb collisions at 5.02 TeV with ALICE

Wednesday, 14 August 2024 17:40 (15 minutes)

The measurement of jets recoiling from a trigger hadron provides unique probes of medium-induced modification of jet production. Jet deflection via multiple soft scatterings with the medium constituents or single-hard Molière scatterings off quasi-particles in the medium are expected to modify the azimuthal correlation between the trigger hadron and recoiling jet. The R -dependence of recoil jet yield also probes jet energy loss and intra-jet broadening. In this talk, we present measurements of the semi-inclusive distribution of charged jets recoiling from a trigger hadron in pp and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE. We employ precise, data-driven subtraction of the large uncorrelated background contaminating the measurement in Pb-Pb collisions, enabling the exploration of medium-induced modification of jet production and acoplanarity over a wide phase space, including the low jet p_T region for large jet resolution parameter R . Hadron-jet acoplanarity in pp collisions will also be presented, which provides a sensitive test of pQCD calculations and a crucial data reference for in-medium jet deflection studies in Pb-Pb collisions. We observe that the jet yield at low p_T and at large azimuthal angle between the trigger hadron and jet is significantly enhanced in Pb-Pb collisions to pp collisions. Comparison to theoretical calculations incorporating jet quenching will also be discussed.

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Session Classification: 分会场三

Track Classification: 重离子物理