

Measurement of semi-inclusive jet fragmentation functions in Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV in STAR

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Jet quenching modifies measured jet spectra and substructure, including the fragmentation pattern relative to jets in vacuum. In this poster, we will report a novel measurement of the fragmentation of quenched jets in central and peripheral Au+Au collisions at $\sqrt{s_{\text{NN}}} = 200$ GeV by the STAR experiment at RHIC, based on a semi-inclusive population of jets recoiling from a high transverse momentum trigger hadron. Jets are reconstructed with the anti- k_{T} algorithm, and the fragmentation function is constructed from the fraction of the transverse momentum of charged particles projected onto the jet axis over that of the jet. In STAR's previous analysis of the semi-inclusive charged-jet spectra, the Mixed Event technique was used along with the semi-inclusive approach to remove the uncorrelated background contributions [1]. Such techniques have proven to be an excellent tool for isolating contributions from hard-scattered partons, and are now further developed for the measurement of jet fragmentation functions. We attempt to correct for uncorrelated background effects and instrumental effects via unfolding in fragmentation functions, and preliminary results for central and peripheral collisions will be presented.

[1] STAR Collaboration, Phys. Rev. C 96 (2017) 24905