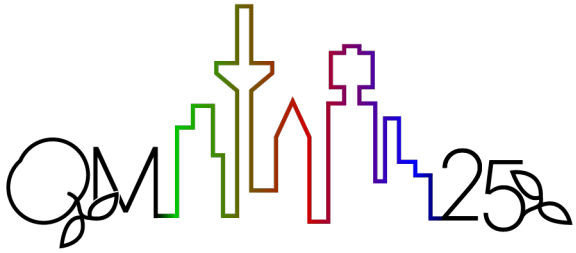

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Observation of medium-induced acoplanarity using γ and π^0-triggered semi-inclusive recoil jet distributions in central Au+Au and $p+p$ collisions at $\sqrt{s_{\rm NN}} = 200$ GeV by STAR

We present measurements of azimuthal acoplanarity based on direct photon (γ) and π^0-triggered semi-inclusive recoil jet distributions in central Au+Au and $p+p$ collisions at $\sqrt{s_{\rm NN}} = 200$ GeV, using datasets with integrated luminosity of 3.9 nb^{-1} and 23 pb^{-1}, respectively.
This observable may probe jet wake effects and Moliere scattering off of quasi-particles in the QGP. Jets are reconstructed from charged particles using anti-k$_T$ with R=0.2 and 0.5, with uncorrelated background corrected using event mixing. The γ and π^0 triggers have transverse energy in the interval [11,15] GeV, and recoil jets are reported in the p_T interval [10,20] GeV/c. Marked medium-induced acoplanarity is observed with both triggers for recoil jets with R=0.5 but not R=0.2, similar to a recent measurement at the LHC. We discuss the insight that these observations provide into the nature of the jet-medium interaction and the response of the QGP to excitation. The measurements will also be compared to theoretical calculations.

Category

Experiment

Collaboration (if applicable)

STAR

Author: Dr SAHOO, NIHAR RANJAN (Texas A&M University)

Presenter: Dr SAHOO, NIHAR RANJAN (Texas A&M University)

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