Contribution ID: **243** Type: **Poster**

Search for large-angle jet deflection using semi-inclusive $\gamma_{\rm dir}$+jet and π^0+jet correlations in $p+p$ and Au+Au collisions at $\sqrt{s_{\rm NN}}$ =200 GeV with STAR

Wednesday, 6 April 2022 18:02 (4 minutes)

The measurement of jet deflection in heavy-ion collisions promises to provide unique and incisive insight into the physics of jet quenching and the quasi-particle nature of the QGP. However, observation of large-angle jet deflection favors using low transverse momenta ($p_{\rm T}$) jets, which is challenging in the high-background environment of heavy-ion collisions. The semi-inclusive approach to coincidence measurements, with data-driven background removal, is the only established analysis technique that can carry out such measurements with precision estimation of systematic uncertainties. In this poster, the STAR experiment at RHIC reports the first measurement of semi-inclusive $\gamma_{\rm dir}$+jet and π^0+jet azimuthal correlations in $p+p$ and central Au+Au collisions at $\sqrt{s_{\rm NN}}$=200 GeV. Charged-particle recoil jets are reconstructed using the anti-$k_{\rm T}$ algorithm with R = 0.2 and 0.5, and uncorrelated recoil jet contributions are corrected using a Mixed Event technique. Azimuthal distributions are reported for recoil jets with $p_{\rm T,jet}$ >5 GeV/c. The distributions in $p+p$ collisions are compared to NLO pQCD calculations including Sudakov broadening, and those in Au+Au collisions are compared to theoretical model calculations incorporating jet quenching.

Primary authors: Dr SAHOO, NIHAR RANJAN (Shandong University); STAR COLLABORATION

Presenter: Dr SAHOO, NIHAR RANJAN (Shandong University)

Session Classification: Poster Session 1 T04_1

Track Classification: Jets, high-pT hadrons, and medium response