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Dihadron fragmentation functions within reconstructed jets in $p+p$ collisions at $\sqrt{s}=200$ GeV in STAR MUHAMMAD ELNIMR¹, Wayne State University — Dihadron azimuthal correlations between two high transverse momentum hadrons are commonly used to study the medium modification in heavy-ion collisions at RHIC. However, near-side jet-like correlation show little modification relative to that measured in $p+p$ and $d+Au$ collisions whereas the away-side is significantly suppressed in central $Au+Au$ collisions at $\sqrt{s_{NN}}=200$ GeV[1]. Dihadron correlations within the same jet were measured in DIS experiments such as HERMES [2]. These showed only minimal variation with the choice of nuclear target, even though the single inclusive production of leading hadrons is highly suppressed for heavier targets. Measurements of di-hadron fragmentation functions shall provide a better basis for the interpretation of near-side correlations already measured at RHIC [3]. We present measurements of the dihadron fragmentation function $D(z_1, z_2)$ of charged hadrons within fully reconstructed jets in $p+p$ collisions at $\sqrt{s_{NN}}=200$ GeV in the STAR experiment. We also calculate the ratio $D(z_1, z_2)/D(z_1)$ and compare it to the rescaled fragmentation function $D(z_2/(1-z_1))$ in line with [3]. We investigate the prospect of using such comparison to evaluate the quark/gluon flavor of jets as function of the jet energy at RHIC.

¹(For the STAR collaboration)

Muhammad Elnimr
Wayne State University

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