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Jet modification with two particle correlations in Au+Au collisions at PHENIX

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Two particle correlations which use a high momentum trigger particle are a useful probe for exploring energy loss in the quark gluon plasma, particularly in the high multiplicity environment of heavy ion collisions. Previous direct photon-hadron correlation measurements in PHENIX have demonstrated the energy loss observed as the suppression of high momentum particles is redistributed to low momentum particle production at wide angles from the jet. The direct photon gives access to the kinematics from the initial hard scattering, which can be used to directly measure the fragmentation function of the opposing jet. However, it has been observed that the transition from suppression to enhancement appears at a fixed associated particle p_T rather than at a fixed z , the fragmentation function variable. Recent π^0 -hadron correlations have explored these modifications more differentially as a function of associate hadron p_T and angular distance, $\Delta\phi$, from the approximated jet axis. This talk will report on the latest two-particle correlation measurements in Au+Au collisions compared to p+p collisions from PHENIX, their relation to fully reconstructed jet measurements and the implications of these measurements on our understanding of jet energy loss in the QGP.

Collaboration (if applicable)

PHENIX

Track

Jets and High Momentum Hadrons

Contribution type

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