



Contribution ID: 299

Type: Talk in Parallel Session at DIS2013

Direct-photon hadron correlations at $\sqrt{s} = 200$ GeV with PHENIX

Tuesday 23 April 2013 17:30 (20 minutes)

Direct photon tagged jets, in the form of photon-hadron correlations, are well suited to provide unique insight into how jets interact with the quark gluon plasma. Since high momentum photons are unmodified by the strongly coupled medium produced at RHIC, the measured photon momentum approximately balances that of the away-side parton. Therefore, the effective modification to the fragmentation function can be measured by comparing integrated away-side yields in direct photon-hadron correlations in Au+Au collisions to those in p+p. By varying the away-side integration range, the angular dependence of modification to the effective fragmentation function can also be studied. Direct photon-hadron correlations have been measured with PHENIX in p+p and Au+Au using a statistical subtraction technique to remove the decay photon contribution from the inclusive photon-hadron correlations, with an additional isolation cut applied in p+p. These recently published results will be discussed in light of complementary results from STAR and the LHC, as well as qualitative comparisons with theoretical predictions.

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Session Classification: WG4: QCD and HFS

Track Classification: QCD and Hadronic Final States