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Probing the hot medium using dihadron fragmentation functions in $Au-Au$ and $Cu-Cu$ collisions at $\sqrt{s_{NN}} = 200GeV$ at RHIC[1] OANA CATU, Yale University, STAR COLLABORATION — One of the most important results from the experiments at RHIC is the observation of jet modification which is believed to be due to parton energy loss in heavy ion collisions. We present a detailed investigation of this effect using dihadron fragmentation functions measured using azimuthal correlations at high transverse momentum (p_T) . We study possible medium-modifications of the charge ordering in jets in heavy ion collisions by measuring the ratio of opposite-sign and same-sign pairs. The results are compared to Pythia calculations. This way we investigate the possible modification of charge ordering in jets in heavy ion collisions. We study the system size dependence of dihadron fragmentation functions by comparing the results for $Au-Au$ and $Cu-Cu$ collisions at $\sqrt{s_{NN}} = 200GeV$ as measured in STAR. These results will give insight into the mechanisms of parton energy loss in the hot medium created in high energy heavy ion collisions at RHIC.

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