

Two particle correlation measurements at PHENIX

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Measurements of two particle correlations are important tools to dissect the interplay of hard-scattered partons and the hot dense medium created by ultra-relativistic heavy ion collisions. One of important topic of correlation measurements in heavy ion collisions is to evaluate the path-length dependence of parton energy loss and to discern the medium response to it. Another topic is to analyze the contributions of higher harmonic flow, which result from fluctuations within the initial collision geometry, to long range rapidity correlations.

In this talk, we will present recent PHENIX measurements in Au+Au 200 GeV collisions of azimuthal correlations with trigger selections relative to the event plane for both high and mid transverse momenta. These produce measurements sensitive to the path-length dependence of parton energy loss and to the influence of medium effects respectively. Azimuthal correlations in which background from higher harmonic flow is removed will also be discussed.

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