

Abstract Submitted
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Study of jet quenching mechanisms at RHIC via multi-hadron correlations JEREMY CALLNER, UIC, STAR COLLABORATION — Recent experimental results from RHIC have shown that QCD jets created in ultra-relativistic heavy-ion collisions are quenched, depositing a significant fraction of their energy in the created strongly coupled medium. The details of the jet-quenching process are the subject of many theoretical predictions/calculations. Various energy loss scenarios have been proposed to explain experimental observations, such as the mach cone shock wave effect, Cherenkov gluon radiation, jet deflection in the expanding medium, and others. In this talk we will present a new three-particle correlation technique from STAR, in which we study the energy loss mechanisms in ultra-relativistic Au+Au collisions, particularly the deflection of the jets and the existence of a mach cone effect. We use a di-hadron projection of three-particle correlation on jet axis determined by two high- p_T triggers. The measurements for Au+Au events of different centralities are compared with d+Au data used as a reference, unmodified by the QCD medium.

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