

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Measurement of Electron-Muon Correlations from Semi-Leptonic D Decay in 200 GeV p+p Collisions at RHIC-PHENIX TATIA ENGELMORE, Columbia University, PHENIX COLLABORATION — Charm production is a valuable probe of the early stages of a heavy ion collision. Correlated electron-muon pairs are a signature of semi-leptonic D decays, and a measurement of D mesons provides information on charm quark energy loss in the hot medium. The energy loss of heavy quarks is still not fully understood, so it is vital to investigate different decay channels of charm mesons to better understand this process. Measurements of electron-muon pairs suffer less from background than e^+e^- or $\mu^+\mu^-$ pairs since neither thermal production, Drell-Yan production, nor resonance decays produce this type of correlated signal. This talk will present the analysis of $e - \mu$ pairs in data taken during the 2006 RHIC run of p+p collisions at 200 GeV. It will be shown that a clear back-to-back peak exists in the azimuthal angular distribution of the pairs, indicating charm production. It will also be shown that background sources are small relative to this measurement. The study of electron-muon pairs in p+p collisions provides an important baseline and the first step towards the study of this process in d+Au and Au+Au collisions.

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Date submitted: 27 Jun 2008

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