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STAR Measurements of Non-photonic Electron Production in d+Au and p+p collisions at $\sqrt{s_{NN}}$=200 GeV

Wei Xie for the STAR Collaboration

Physics Department, Purdue University
West Lafayette, IN 47907, USA

Contact e-mail: *wxie@purdue.edu*

Heavy quarks (charm and bottom) are produced early in the evolution of a heavy ion collision. Because of their large masses, they are expected to respond differently than light quarks and gluons to interactions in matter, thereby providing unique and sensitive probes of the medium generated in heavy ion collisions. Measurements of heavy quark production in p+p and d+Au collisions are needed as essential reference for heavy studies, to disentangle the effects of cold and hot matter on heavy quark observables. Heavy quark measurements in p+p and d+Au are also crucial input for theoretical understanding of heavy quark production in the framework of pQCD.

In this talk we present new STAR measurements of heavy quark production via non-photonic electrons (NPE) from their semi-leptonic decay, in d+Au and p+p collisions at $\sqrt{s_{NN}}$=200 GeV. We utilize data from the high integrated luminosity 2008 run, in which the STAR detector was modified to reduce material interior to the TPC by a factor of 10 relative to previous NPE measurements. This modification dramatically reduces the background to non-photonic electrons, with correspondingly smaller systematic uncertainties. The measurement of NPE will be reported at mid-rapidity over the range of p_T between 0.2 and 10 GeV/c, utilizing triggers based on Time-of-Flight and Electromagnetic Calorimeter. This new measurement will help reconcile the discrepancy in published NPE measurements from STAR and PHENIX, and comparison will be made to the currently published NPE measurements.