

Measurements of Non-photonic Electron Spectra and Elliptic Flow in Au+Au Collisions from STAR at RHIC

The dependence of parton energy loss on the space-time evolution of the QCD medium is believed to be mostly responsible for the azimuthal angular anisotropy distribution of high transverse momentum (p_T) particles in nucleus-nucleus collisions. Simultaneous measurements of both the nuclear modification factors and the elliptic flow parameter v_2 can provide insights on parton energy loss mechanisms and space-time evolutions of the colliding system. Heavy quarks are particularly effective probes because their initial production can be reliably calculated from pQCD approaches and their final states reflect directly evolutions through the strongly interacting partonic medium created in heavy ion collisions. We will present the STAR non-photonic electron (NPE) measurements at high p_T from p+p and Au+Au collisions. The data were taken during run 2009 and run 2010, where unprecedented amount of data have been collected with detector configurations for minimum photonic conversion background. Both the nuclear modification factors and the v_2 measurements will be reported as a function of p_T and collision centralities. Comparisons with theoretical model calculations and possible constraints on properties of the partonic medium will be discussed.

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