

**Measurements of High  $p_T$  Identified Hadron Spectra and  $R_{cp}$ ,  
from Run 7 Au+Au  $\sqrt{s_{NN}} = 200$  GeV by the PHENIX Experiment**

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One of the most striking observations in heavy ion collisions at RHIC is the large enhancement of baryons and antibaryons relative to pions at intermediate  $p_T$  2-5 GeV/c. The PHENIX experiment has observed enhanced proton/pion ratios in central Au+Au collisions as compared to the expectation from parton fragmentation. The measurements were done using the Time-of-Flight (TOF) detector in the PHENIX East arm, which allowed pi/K and K/p separation up to  $p_T = 2.5$  and 4 GeV/c respectively. Particle identification (PID) to higher  $p_T$  ( $> 8$  GeV/c) is needed to better characterize the hadron production mechanism at intermediate and high  $p_T$  to differentiate between competing theoretical descriptions. Measurements of the nuclear modification factor (central to peripheral ratios,  $R_{cp}$ ) and high  $p_T$  PID pi/K/p/d spectra will be presented. These measurements should help us understand both energy loss and particle production mechanism in the transition from low to high  $p_T$ . This higher  $p_T$  data set is from the upgraded high- $p_T$  PID system in PHENIX. A new TOF detector was installed in the West arm which allows a seamless track-by-track PID up to transverse momenta  $p_T$  of  $\approx 9.0$  GeV/c when used in conjunction with the Aerogel Cherenkov Counter. The large data set and new detector capabilities extend the momentum range well beyond the intermediate  $p_T$  region.