HAW05-2005-020037

Abstract for an Invited Paper
for the HAW05 Meeting of
the American Physical Society

Heavy flavor and direct photon measurements at RHIC

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RHIC energies and luminosities are sufficiently high that, for the first time, elementary partonic processes at high Q^2 take place within heavy-ion collisions at substantial rates. The products of these elementary scatterings will then form well-defined, high-momentum QCD objects that will already exist when an excited medium is created in the space surrounding them. As they then propagate, their interactions will probe the created medium from its very earliest stages. Among the key studied QCD objects are the following, described by their speed through the medium, multiplet and the associated observables: "Slow"/Heavy flavor: color triplet for open charm and bottom production, color octet/singlet for heavy quarkonia via lepton pairs. "Fast"/Prompt direct photons: color-less, studied with isolated high pT photons. To distinguish novel behaviour from competing normal nuclear effects it is very important to systematically measure the production for several collision species, energies and as a function of centrality and rapidity. An overview of heavy flavor and prompt direct photon results obtained to date at RHIC will be presented.