

Recent PHENIX results on open heavy flavor

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Throughout the history of the RHIC physics program, questions concerning the dynamics of heavy quarks have generated much experimental and theoretical investigation. A major focus of the PHENIX experiment is the measurement of these quarks through their semi-leptonic decay channels at mid and forward rapidity.

Heavy quark measurements in p+p collisions give information on the production of heavy flavor, without complications from medium effects. New measurements in d+Au indicate significant and surprising cold nuclear matter effects on these quarks at midrapidity, and provide a new baseline for interpretation of the observed suppression in Au+Au collisions. To complement the measured heavy quark spectra, correlations between heavy quark decay products give information on jet modification in nuclear collisions, while correlations between heavy quarks and hadrons produced in the same event can shed light on interactions with the medium. When considered all together, these measurements present a detailed study of nuclear matter across a wide range of system size and temperature. This talk will present new PHENIX measurements of non-photon electron spectra and their centrality dependence in d+Au, and discuss their implications on the current understanding of parton energy loss in the nuclear medium.

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