

## 5th International workshop on heavy quark production in heavy-ion collisions



Contribution ID: 66

Type: **not specified**

### Heavy Flavor Dileptons at PHENIX

*Friday, 16 November 2012 16:55 (25 minutes)*

Charm and bottom quarks are very effective probes of the Quark Gluon Plasma (QGP) created in heavy ion collisions as they are created in the initial hard scattering and therefore fully traverse the hot nuclear medium before fragmentation into the vacuum. Along with a well-established baseline measurement, any observed modification to heavy-ion heavy flavor spectra can yield insight into the interaction between the heavy quarks and the QGP.

Dilepton correlations provide an extremely useful window to open heavy flavor. Semi-leptonic decays of B and D mesons can be studied through both the unlike sign and like sign correlated dilepton pairs. They yield a clean signal which is largely free of contamination and provide reasonable separation of charm and bottom. Moreover, they access a region of phase space where pQCD calculations are more reliable than for single lepton observables.

The PHENIX experiment has extrapolated the charm and bottom cross sections through both leading order and next-to-leading order calculations for  $\sqrt{s} = 200$  GeV and  $\sqrt{s} = 500$  GeV. These heavy flavor results from two particle correlations have been explored in both  $p+p$  and  $d+Au$  collisions at PHENIX. Heavy flavor production determined in both the dielectron and dimuon channels will be shown.

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**Session Classification:** HF particle correlations