

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



Contribution ID: 30

Type: **not specified**

Open charmed mesons production at STAR

Thursday 15 November 2012 12:00 (30 minutes)

The properties of the hot and dense nuclear matter produced at RHIC in heavy ion collisions can be investigated in multiple ways by heavy flavor production.

In this talk, we will present the STAR results of open charm hadron production at mid-rapidity in $p + p$ and Au+Au collisions at

$\sqrt{s_{NN}} = 200$ GeV. Open charm mesons were reconstructed directly via hadronic decay channels with daughter particles identified by TPC and TOF detectors. With abundant statistics of Au+Au collisions collected by STAR in the year 2010 and 2011, the D-meson is measured at p_T from 0 to 8 GeV in minimum bias Au+Au collisions. The centrality dependence of D-meson p_T spectra as well as the nuclear modification factor will be presented. The measurement of the D^0 elliptic flow in 200 GeV Au+Au collisions will be reported. Finally, we will discuss the open charm hadron measurement in $\sqrt{s} = 500$ GeV $p + p$ collisions to study the energy dependence of charm production.

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Session Classification: Open charm

Track Classification: Open charm