



Contribution ID: 886

Type: **Parallel Talk**

## Measurements of open charm hadron production in Au+Au collisions by the STAR experiment

*Thursday 6 July 2017 15:15 (15 minutes)*

Charm quarks possess large masses and thus they are expected to be primarily produced at the initial stages of heavy-ion collisions. Hot and dense nuclear matter, usually referred to as the Quark-Gluon Plasma (QGP), can also be created in these collisions. Therefore, the QGP can be studied using charm quarks as penetrating probes via the in-medium energy loss, which is directly related to the intrinsic properties of the medium. In particular, a mass ordering of the parton energy loss in the hot medium is predicted, i.e. heavy-flavor quarks are expected to lose less energy than light quarks. Measurements of charm meson production in heavy-ion collisions provide a great opportunity to study the charm quark energy loss in the medium, and thus the QGP properties. Moreover, STAR has measured several species of charm hadrons and, therefore, can probe several modes of hadronization in the medium. In this presentation, we report the most recent measurements of the production of  $D^0$  and  $D^\pm$ , as well as  $D_s$ , containing a strange quark, and the  $\Lambda_c$  baryon in Au+Au collisions at the center-of-mass energy per nucleon-nucleon collision of  $\sqrt{s_{NN}} = 200$  GeV. These particles are reconstructed via their hadronic decay channels, where the daughter particles can be tracked and identified with excellent precision.

### Experimental Collaboration

STAR collaboration

**Primary author:** Mr SIMKO, Miroslav (Nuclear Physics Institute of The Czech Academy of Sciences)**Presenters:** Mr SIMKO, Miroslav (Nuclear Physics Institute of The Czech Academy of Sciences); SIMKO, Miroslav (Nuclear Physics Institute of the Czech Academy of Sciences (cz))**Session Classification:** Heavy ion physics**Track Classification:** Heavy Ion Physics