

1 **Reconstruction of D^0 mesons in d+Au collisions at**
2 **$\sqrt{s_{\text{NN}}} = 200$ GeV by the STAR experiment**

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6 Owing to their large masses, charm quarks are predominantly produced
7 through initial hard scatterings in heavy-ion collisions. Therefore, they
8 can serve as penetrating probes to study the intrinsic properties of the hot
9 medium created in heavy-ion collisions. However, Cold Nuclear Matter ef-
10 fects can also affect the charm quark production in nuclear collisions with
11 respect to p+p collisions. These effects can be measured in small systems
12 such as d+Au collisions.

13 In this poster, D^0 meson reconstruction in d+Au collisions at $\sqrt{s_{\text{NN}}} =$
14 200 GeV at the STAR experiment is described. Thanks to the high-precision
15 Heavy Flavor Tracker detector, $D^0(\bar{D}^0)$ mesons are topologically reconstructed
16 from their hadronic decay channel $D^0(\bar{D}^0) \rightarrow K^-\pi^+(K^+\pi^-)$. The Boosted
17 Decision Trees machine learning algorithm from the TMVA package is ap-
18 plied in order to improve signal/background separation.