Contribution ID: **328** Type: **Poster**

D^0 production in p+p $sqrts$ = 200 GeV collisions at STAR

The charm production is sensitive to early dynamics of the created system in RHIC heavy ion collisions. Dominant process of charm quark production at RHIC is believed to be initial gluon fusion which can be calculated in the perturbative QCD. Understanding both the charm production total cross section and the fragmentation in p+p collisions is a baseline to further explore the QCD medium via open charm and charmonium in heavy ion collisions.

This poster will present the reconstruction of open charm meson D^0 via the weak decay to K and π mesons in the p+p collisions at midrapidity for $sqrts$ = 200 GeV.
The analysis is based on the large p+p minimum bias sample collected in RHIC year 2009 by the STAR detector. The Time-Of-Flight detector, which covered 72% of the whole barrel in year 2009, was firstly used to improve the decay daughter identification. The open charm cross section from hadronic decay channel will be presented.

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Track Classification: Heavy flavor and quarkonia production