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## Heavy Flavor Triggered Azimuthal Correlations in p+p Collisions at $\sqrt{s}$ center-of-mass energy of 500 GeV

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Heavy quarks are mostly produced through initial hard scatterings at RHIC energies and they carry clean information of sQGP medium dynamics. Heavy flavor triggered correlation offers a unique insight into early interaction dynamics. Investigations of heavy quark production and correlation mechanisms in proton-proton collisions are of great importance and interest as a fundamental perturbative QCD (pQCD) test and baseline measurement for heavy-ion collisions.

This poster reports the new STAR measurements of heavy flavor triggered correlations in p+p collisions at  $\sqrt{s}$  center-of-mass energy of 500 GeV using D mesons. Azimuthal angular correlation distributions between trigger D mesons and associated charged hadrons (D-h) as well as anti-D mesons (D - D) are measured in p+p collisions at center-of-mass energy of  $\sqrt{s}$  500 GeV for the first time. These results are compared with pQCD calculations to improve the understanding of charm quark production in elementary hadron collisions. Meanwhile, prospects of heavy flavor correlation measurements in heavy-ion collisions utilizing the new STAR Heavy Flavor Tracker are discussed.

### On behalf of collaboration:

STAR

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