

Abstract Submitted
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Probing gluon distributions with heavy quark pairs at the EIC
SOORAJ RADHAKRISHNAN, Kent State University/Lawrence Berkeley National Laboratory — Heavy quark production in deep inelastic scattering proceeds via the Boson Gluon Fusion process and thus provides constraints to the gluon distributions inside the nucleon/ion probed. Measurements of semi-inclusive deep inelastic scattering events with tagged charm and anti-charm hadron pair in the final state and the pair transverse momentum and azimuthal distributions can therefore be used to probe the spin-dependent gluon transverse momentum distribution functions in the nucleon/ion. In this talk we will discuss open charm hadron reconstruction studies with an all silicon detector design for a future Electron Ion Collider (EIC) experiment and the impact on the reconstructed open charm hadron pair signal significance for different particle identification and secondary vertex resolution capabilities. Statistical uncertainty projections for physics observables in both polarized and unpolarized collisions at the EIC will be discussed.

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