

XXIV International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS16)



Contribution ID: 231

Type: **not specified**

Probing nuclear gluons with heavy flavors at an Electron-Ion Collider

Tuesday, April 12, 2016 6:10 PM (15 minutes)

We study the prospects for measuring nuclear modifications of the gluon density (gluonic EMC effect, antishadowing, shadowing) using open heavy flavor production (charm, beauty) at a future Electron-Ion Collider (EIC). Such direct measurements complement indirect studies of nuclear gluons through DGLAP evolution and could substantially advance our understanding of QCD in nuclei. Building on the experience with HERA, we discuss (a) the expected heavy quark production rates on nuclei at EIC; (b) the possible methods of charm/beauty reconstruction at EIC and their requirements; (c) prospects of open charm/beauty measurements at $x > 0.1$; (d) specifics of nuclear ratio measurements of heavy meson production. We report about results from an on-going R&D project dedicated to heavy flavor production at EIC (process simulations, physics impact).

Primary author: WEISS, Christian (Jefferson Lab)

Co-authors: HYDE, Charles (Old Dominion University); NGUYEN, Dien (University of Virginia); HIGINBOTHAM, Doug (Jefferson Lab); CHUDAKOV, Eugene (Jefferson Lab); STRATMANN, Marco (University at Tübingen); STRIKMAN, Mark (Penn State University); FURLETOV, Sergey (Jefferson Lab); FURLETOVA, Yulia (Jefferson Lab)

Presenter: WEISS, Christian (Jefferson Lab)

Session Classification: WG4 Heavy Flavours

Track Classification: Heavy Flavours (Charm, Beauty and Top)