Contribution ID: **697** Type: **Parallel session talk**

Precision QCD at the LHeC and FCC-he

Friday 25 August 2023 09:15 (12 minutes)

The Large Hadron-electron Collider and the Future Circular Collider in electron-hadron mode [1] will make possible the study of DIS in the TeV regime providing electron-proton (nucleus) collisions with per nucleon instantaneous luminosities around 10^{34} (10^{33}) cm^{-2}s^{-1}. In this talk we review the opportunities that these proposals offer for the determination of the partonic structure of protons and nuclei in view of the recent findings at the LHC and the future possibilities at the LHC and the EIC. The complete unfolding of all parton species in a single experiment with high precision in an extended kinematic domain would be possible already in a first stage of the machine with modest integrated luminosity. We also present the determination of the strong coupling constant with per mille accuracy using inclusive and jet DIS data.
[1] LHeC Collaboration and FCC-he Study Group: P. Agostini et al., J. Phys. G 48 (2021) 11, 110501, e-Print: 2007.14491 [hep-ex].

Collaboration / Activity

LHeC/FCC-he Study Group

Primary author: ARMESTO, Nestor (IGFAe and Universidade de Santiago de Compostela, Spain)

Presenter: GIULI, Francesco (PhD student)

Session Classification: T06 QCD and Hadronic Physics

Track Classification: QCD and Hadronic Physics