



Contribution ID: 1127

Type: Parallel Talk

eA and high parton densities at the LHeC and FCC-he

Thursday, 7 July 2022 12:25 (15 minutes)

The LHeC and the FCC-he will measure DIS cross sections and the partonic structure of protons and nuclei in an unprecedented range of small x . In this kinematic region the non-linear dynamics expected in the high energy regime of QCD should be relevant in a region of small coupling. In this talk we will demonstrate the unique capability of these high-energy colliders for unravelling dynamics beyond fixed-order perturbation theory, proving the non-linear regime of QCD, saturation, to exist (or to disprove). This is enabled through the simultaneous measurements, of similar high precision and range, of pp and eA collisions which will eventually disentangle nonlinear parton-parton interactions from nuclear environment effects.

Reference: P. Agostini et al. (LHeC Study Group), The Large Hadron-Electron Collider at the HL-LHC, J. Phys. G 48 (2021) 11, 110501, e-Print: 2007.14491 [hep-ex].

In-person participation

Yes

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Session Classification: Heavy Ions

Track Classification: Heavy Ions