ICHEP2012



Contribution ID: 603

Type: Parallel Sessions

Electron-Ion Collisions at a Large Hadron electron Collider (LHeC Study Group)

Friday 6 July 2012 13:00 (15 minutes)

The Large Hadron electron Collider (LHeC) is a proposed facility which will exploit the LHC heavy ion beam for electron-nucleus scattering, using a new 60 GeV electron accelerator. This contribution, which is derived from the detailed simulations in the recently released Conceptual Design report, addresses the expected physics impact of the LHeC for heavy ion physics and nuclear parton density determinations. The kinematic coverage extends beyond previous deep inelastic lepton-ion experiments by nearly four orders of magnitude at low Bjorken x (from x \sim 10 $^{-6}$) and is expected to be sufficient to reveal the non-linear dynamics which tame the low x growth of parton densities. The inclusive electron-lead cross section, as well as exclusive and diffractive channels, are explored as means of probing this new region of very high parton densities.

Author: Prof. NEWMAN, Paul (University of Birmingham (UK))

Presenter: Prof. NEWMAN, Paul (University of Birmingham (UK))

Session Classification: Room 217 - Heavy Ion Collisions / B-Physics / CP Violation - TR5/7/9

Track Classification: Track 9. Heavy Ion Collisions