XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 529

Type: Contributed Talk

Higgs physics at the LHeC and the FCC-eh

Thursday, 15 April 2021 13:09 (15 minutes)

Higgs production cross sections at LHeC (FCC-eh) energies are as large (larger than) those at future Z-H e^+e^- colliders. This provides alternative and complementary ways to obtain very precise measurements of the Higgs couplings, primarily from luminous, charged current DIS. Recent results for LHeC and FCC-eh [1] are shown and their combination is presented with pp (HL-LHC) cross sections leading to precision comparable to the most promising e^+e^- colliders. We will show the results for the determination of several signal strengths and couplings to quarks, leptons and EW bosons, and discuss the possibilities for measuring the coupling to top quarks and its CP phase, and the search for invisible decays.

[1] LHeC Collaboration and FCC-he Study Group, P. Agostini et al., e-Print: 2007.14491 [hep-ex

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Session Classification: Electroweak Physics and Beyond the Standard Model

Track Classification: Electroweak Physics and Beyond the Standard Model