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Higgs physics at the LHeC and the FCC-eh

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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]

Author: ARMESTO, Nestor (Universidade de Santiago de Compostela)

Presenter: KLEIN, Uta

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