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BSM physics at the LHeC and the FCC-eh

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The Large Hadron-electron Collider (LHeC) is a proposed upgrade of the LHC at CERN. It consists of an ERL providing electrons to collide with the HL-LHC, HE-LHC and the FCC-hh proton beams achieving centre-of-mass energies 1.3-3.5 TeV, respectively, at very high luminosities $\sim 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$. These large luminosities and energies provide most interesting possibilities for discoveries of new physics, beyond the SM. In this talk we present the latest results on the prospective determination of anomalous couplings involving top, Higgs and W , Z bosons in high-energy DIS at the LHeC and the FCC-eh, on studies on sterile neutrinos and other new physics models. We also show the complementarity with corresponding studies at the HL-LHC.

Primary author: ARMESTO PEREZ, Nestor (Universidade de Santiago de Compostela (ES))

Presenter: SCHWANENBERGER, Christian (Deutsches Elektronen-Synchrotron (DE))

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