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## Probing non-standard $HVV$ ( $V = W, Z$ ) couplings in single Higgs production at future electron-proton collider (cancelled)

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At the proposed future Large Hadron-Electron Collider (LHeC), the coupling between the Higgs boson ( $H$ ) and the massive gauge bosons ( $V = W, Z$ ) of weak interaction can be investigated through the single Higgs boson production. In this presentation, I will focus on the potential of the collider to determine constraints on the new physics parameters associated with the most general structure of the  $HVV$  couplings. Our study involves exploring various angular observables that are sensitive to these couplings at an electron-proton collider with 60 GeV electron and 7 TeV proton energies. I will present a statistical analysis that leads to exclusion limits on individual new physics parameters as a function of luminosity. To improve the theoretical precision, we incorporate Next-to-Leading (NLO) order QCD correction in the Standard Model calculation. Additionally, I will discuss the impact of NLO QCD corrections on angular observables and how they ultimately influence the constraints on the new physics parameters of the  $HVV$  couplings.

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