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Higgs Properties measurements using four lepton decay channel

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The properties of the Higgs boson would be presented in the $H \rightarrow ZZ \rightarrow 4\ell$ ($\ell = e, \mu$) decay channel using a data sample corresponding to an integrated luminosity of 36.8 fb^{-1} of proton-proton collisions at a center-of-mass energy of 13 TeV recorded by the CMS detector at the LHC. The expected significance for the standard model Higgs boson with $m_H = 125.09 \text{ GeV}$ is 8.0σ . The signal strength modifiers for the main Higgs boson production modes would also be constrained. The model independent differential fiducial cross sections as a function of the p_T of the Higgs boson, the number of associated jets, and the p_T of the leading associated jet would be determined. The mass and width of Higgs boson would also be reported.

Summary

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