

Impact of higher dimensional operators on Higgs boson phenomenology

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We discuss effects of anomalous Higgs boson couplings characterized by dimension-six operators on the Higgs boson production and decay processes at the LHC and the ILC. The decay pattern of the Higgs boson and the production cross section of $gg \rightarrow H$, $e^+e^- \rightarrow t\bar{t}$, $e^+e^- \rightarrow ZHH$ and $e^+e^- \rightarrow \nu\bar{\nu}HH$ can receive large modifications from the anomalous dim-6 couplings under the constraint from currently available data. We also find that the double Higgs boson production $gg \rightarrow HH$ is very sensitive to the dimension-six top-Higgs operator. These effects can be detectable at future collider experiments.

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