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Effect of anomalous HHH and $ZZHH$ couplings on the decay width of $H \rightarrow ZZ \rightarrow 4l$

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Despite the discovery of the Higgs boson, the Higgs sector of the standard model is still not fully established. In particular, the self couplings of the Higgs boson, and its couplings with gauge bosons, are still to be fully determined. We consider electroweak corrections to the process $H \rightarrow ZZ \rightarrow 4l$. The corrections depend on the HHH and $ZZHH$ couplings. We investigate this dependence in the κ -framework. We find that the width depends on HHH coupling significantly. The dependence on $ZZHH$ coupling is only marginal. We also discuss the dependence on $ZZWW$ coupling.

Session

Higgs Physics

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