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Higgs decay into four charged leptons in presence of dimension six operators

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We study the effects of dimension six operators on the Higgs decay into four lepton channel. The calculation of new matrix element is performed in the Higgs basis and it is implemented in a Monte Carlo event generator. The code also allows the calculation in other popular choices of basis for the dimension six operators. We have considered all the relevant operators, both the CP-even and CP-odd operators, which contribute to this decay channel. Choosing some benchmark values for the parameters of the Higgs basis, we compare our predictions for partial decay width and some important kinematic distributions with the corresponding NLO(EW) SM predictions.

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