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Higgs pair production at the LHC

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We simulate the measurement of the triscalar Higgs coupling at LHC(8,14) via pair production of h(125 GeV). We find that the most promising hh final state is bb + gamma gamma. We account for deviations of the triscalar coupling from its SM value and study the effects of this coupling on the hh cross-section and distributions with cut-based and multivariate methods. Our fit to the hh production matrix element at LHC(14) with 3 ab^−1 yields a 30% uncertainty on this coupling in the SM and a range of 20-60% uncertainties for non-SM values.

Summary

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