

## The low energy theories of the Higgs sector

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Effective field theory provides an excellent way to organize deviations from the Standard Model Higgs properties, in the case of an extended Higgs sector.

In this talk, we present the low energy theories of the Higgs sector for some of the most popular beyond the standard model UV completions. For brevity, we only consider the Higgs sector extended with a real singlet (xSM) and with a second doublet (2HDM). We work at tree level and we consider all the effective dimension six effects, and the most interesting effective dimension eight effects. The results are simple, illustrative and provide valuable tools for studying the Higgs sector at LHC run II, and for understanding CP and flavor violating effects in a general 2HDM near the decoupling limit.

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