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New Physics and the Higgs

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After the discovery of a Higgs boson and the absence of other new physics at LHC8, the minimal Standard Model once again seems to prevail. However, there are strong indirect experimental and theoretical arguments for the existence of physics beyond the SM.
The crucial question is therefore whether the new physics scale will be within reach of the LHC14. The negative possibility was recently explored in the context of high scale SUSY models. However, if new physics is indeed present near the TeV scale, it can either be discovered in the form of new particles, or indirectly in modifications of SM interactions and masses. The interactions of the Higgs boson provide many new previously inaccessible observables in which new physics can leave its footprint. I discuss the different parametrizations of these effects using higher dimensional operators, and some of the challenges one faces when implementing a systematic analysis in this framework.

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