Contribution ID: **101** Type: **Parallel talk**

Exploring Extended Scalar Sectors with Di–Higgs Signals: A Higgs EFT Perspective

Tuesday 20 June 2017 17:00 (15 minutes)

We consider extended scalar sectors of the Standard Model as ultraviolet–complete motivations for studying the effective Higgs self–interaction operators of the Standard Model effective field theory. We investigate all motivated heavy scalar models which generate the dimension–6 effective operator, |H|ˆ6, at tree level and proceed to identify the full set of tree–level dimension–six operators by integrating out the heavy scalars. Next we perform global fits to constrain relevant Wilson coefficients from the LHC single Higgs measurements as well as the electroweak oblique parameters S and T. In order to determine the extent to which the Wilson coefficient of the |H|ˆ6 operator may be constrained at a future 100 TeV collider we study the di–Higgs process and simulate its signatures at the proposed collider. We explore future sensitivity of the Higgs self–interaction operators at the future collider and project it onto the Higgs potential parameters of the extended scalar sectors to identify the discovery potentials in future.

Presentation type

Parallel talk

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Session Classification: Parallel IV