

Triple Higgs boson production in EFTs from on-shell amplitude techniques

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With the measurement of double Higgs production within reach, it is justified to expand our interest to more exotic processes, such as three Higgs boson production. This rare process is crucial for advancing our understanding of the Higgs boson, its interactions (including self-coupling), the Higgs potential, and the mechanism of electroweak symmetry breaking (EWSB). This talk explores the application of on-shell amplitude techniques to study triple Higgs production via gluon fusion and vector boson fusion in EFTs. We construct the relevant kinematic structures, match our results to both HEFT and SMEFT, and analyze the implications. The comparison provides valuable insights into Higgs dynamics and the interplay between EFT frameworks. The talk based on ongoing work.

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