Contribution ID: **8** Type: **not specified**

Two-Higgs-Doublet Model Effective Field Theory

Saturday 16 November 2024 11:00 (20 minutes)

We introduce the general two-Higgs-doublet model effective field theory where the effects of new physics are parametrized by operators up to mass dimension-six. We discuss the differences of the effective field in four types of two-Higgs-doublet models distinguished by Z_2 symmetries which restrict the couplings of the Higgs doublets to Standard Model fermions: type-I, -II, -X, and -Y. We transform the entire effective theory to the Higgs basis and show several advantages, including the separation of operators that modify Standard Model couplings and masses from operators that contribute to scattering processes only, transparent correlations between scattering processes resulting from the same operator, and derivation of correlations between different operators in specific UV completions. For example, we highlight these advantages when calculating the electric and magnetic dipole moments of the muon.

Author: HERMANEK, Keith (Indiana University)

Presenter: HERMANEK, Keith (Indiana University)

Session Classification: 11:00-11:40