

# Is Standard Model effective field theory enough for Higgs pair production?

*Wednesday, September 24, 2025 5:15 PM (15 minutes)*

We study Higgs pair production in lowest order (LO) Higgs effective Field Theory (HEFT) and Standard Model Effective Field Theory (SMEFT) at dimension 6. Inspired by the “Loryon” models, we study which effective field theory one should concretely use and whether one might be able to probe models that realise HEFT rather than SMEFT. We find that in certain region of the parameter space the appropriate EFT to be used is HEFT while SMEFT is non predictive for this class of UV models.

**Primary authors:** Dr ASIÁIN, Iñigo (Barcelona University); TIBERI, Lorenzo (University of Perugia & INFN); Prof. GRÖBER, Ramona (University of Padova & INFN)

**Presenter:** TIBERI, Lorenzo (University of Perugia & INFN)

**Session Classification:** Parallel 6

**Track Classification:** Parallel