

WG2 Higgs Properties topics

A primer for discussion

(unfortunately without TH contacts to consult with)

Inherent topics

- **Deviations:** κ -framework maintenance and upgrade
 - Rein in tHq , $gg \rightarrow ZH$, H^* , invisible, etc.
 - THU for κ (SM) [with WG1].
 - Extend to (parameterisations) of differential distributions?
 - Like $p_T(H)$, $m(VH)$, etc.
 - Are Spin-CP amplitudes good enough?
- **Measurements:** Effective Field Theory (including CP)
 - Tools' choices of basis.
 - “Rosetta stone” of bases.
 - Benchmarks for gradual increase of number of coefficients.
 - As done for κ : first μ , then (κ_f, κ_V) , ..., up to $(\kappa_b, \kappa_\tau, \kappa_t, \kappa_W, \kappa_Z, \kappa_g, \kappa_\gamma, \kappa_\mu, \kappa_{Z\gamma}, \kappa_H)$
 - THU for EFT.
 - Connection to LHC Electroweak WG.

Acquired topics

- **EXP→TH interface**
 - Likelihoods: dimensions, scanning, packaging, publication, etc.
 - Decoupling-recoupling THU.
 - Fiducial cross-sections.
 - Interface the LHC Higgs Combination Group (ATLAS+CMS).
- **Looking ahead**
 - Double Higgs characterization [with WG1].
 - Identify limiting THU as EXPU decrease.

Ideas for the structure

- No plan for sub(sub(sub(sub)))groups.
 - Shared topics with other WGs treated ad hoc.
- But:
 - Dedicated meetings to different topics.
 - Dedicated documents on specific topics.