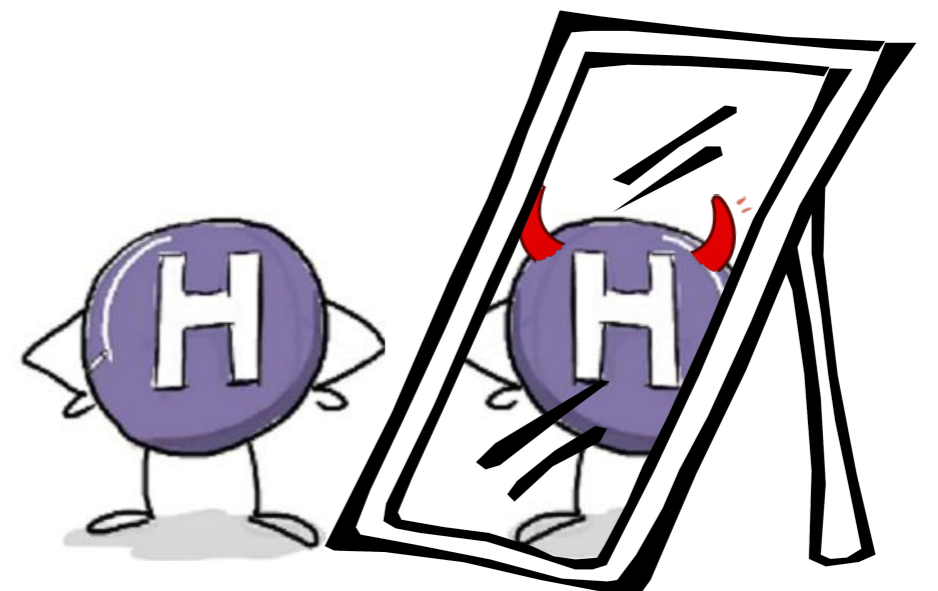


CPV in Higgs interactions: kick-off meeting (part 1)

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LHC Higgs Working Group 2

15th December 2021



Mission statement

From LHCHWG general meeting

- Identify existing/new channels/observables sensitive to CPV
- Study how best to implement in global analyses, e.g. STXS
- Harmonise approach across experiments in view of future combinations
- Recommendations for common parametrisation & measurements to maximise CPV new physics reach at the LHC

'admixture' model $\kappa \cos \alpha + \tilde{\kappa} \sin \alpha$ \Leftrightarrow $\begin{matrix} \tilde{C}_{HWB} & \tilde{C}_{HB} & \tilde{C}_W & \tilde{C}_{tW} & \tilde{C}_{tB} \\ \tilde{C}_{HW} & \tilde{C}_{HG} & \tilde{C}_G & \tilde{C}_{tG} & \tilde{C}_{tH} \end{matrix}$ SMEFT

- Quantify LHC complementarity with other data (EDM, CP asymmetries in meson decays)

Deliverable: LHCHWG recommendations note \Rightarrow

Journal?
SciPost
CERN monograph
TWiki

This meeting

Kick-off part 1

- Experimental summary
- Theoretical parametrisation: SMEFT
- Dedicated approaches: differential & MEM
- Interplay of LHC with EDM & meson decays
- Phenomenological ML studies on $t\bar{t}H$
- Discussion session

Next meeting

Kick-off part 2: provisional date **07/01/2022**

So much interest that we had to split the kick-off into 2 meetings!

- Added some later dates to the original doodle [Link to Doodle](#)
 - Please update if you have a preference over 07/01
- So far:
 - Some more theory/pheno/exp talks
 - Connection to baryogenesis
- Room for more contributions
 - Get in touch! lhc-higgs-properties@cern.ch

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