H(125) bosonic & fermionic decays

Paris Sphicas CERN & NKUA (Athens) HiggsHunting 2022, Paris

Comparison and questions (approximately) 3 slides (plus current one)



$H \rightarrow \gamma \gamma$, ZZ*, WW*

 The game nowadays: STXS, fiducial σ, EFT; reminder: Stage 0: closest to μ in Run1. One bin/production mode (+qqWH, qqZH, ggZH). Stage 1: intermediate time scale; finer binning; bin merging allowed Stage 2: asymptotic binning, after experience with Stage 1. Not fully defined Intermediate stages: 1.1 and 1.2 (increasing complexity/finer binning)



HiggsHunting2022, Paris Sep 12, 2022

$H \rightarrow bb, cc$





Next... (?)

□ EFT analysis

• Major ongoing effort, joint LHC group...

□ Long path to factor two more data ahead (in Run III)

• Need to figure out how to produce "publications" that are pertinent (in the "normal" channels; $H \rightarrow \mu \mu$ is clear...)

□ The role of ML

• In the process of producing NNs that can chair HH2023 sessions