

Higgs and flavor (light fermion couplings, decays to mesons)

- Higgs is the only field with flavor non-universal couplings!
- How can exotic Higgs decays probe **flavor violation**? What is the complementarity with low-energy probes? (also, recent anomalies in B decays)
- What measurement can improve our understanding of Higgs couplings to **light-flavor quarks, leptons**? Not discussed in this workshop yet: $W^+ h - W^- h$ asymmetry, ch production, ... other ideas?
- What is the **next target in signature space**? WD_s , ...
- Putting all info together (inclusive, exclusive, kinematics), can the HL-LHC give us info on $Y_c \sim Y_{cSM}$?
- How to probe **CP violating Higgs couplings** at the LHC?

Higgs semi-invisible decays

- Semi-invisible signatures are not as well covered as the signatures without MET. What are the most important **gaps to cover** in the near future?
- Since Higgs decay signatures are relatively soft, what is the **expected future performance** at higher luminosity/pile-up? Interplay of different production modes
- What are the most testable scenarios for hidden sectors? **Need for new benchmarks** for semi-invisible decays? Interpretation in terms of (very long) lived particles? Rich dark sectors?
- In hidden sector scenarios, what is the **complementarity** with fixed target & beam dump experiments, direct & indirect detection, etc?
- Do we need **new techniques** (e.g., if invisible particles are produced in a hidden sector shower, collinear with hadrons or leptons, ...)?

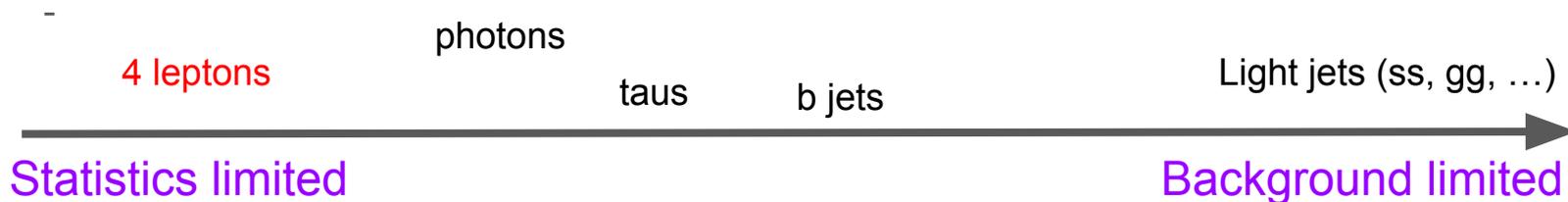
Trigger capabilities for exotic Higgs decays (extension of yesterday's discussion)

- ATLAS and CMS are currently (and also for the HL-LHC) extending their trigger capabilities to cope with increased luminosity
 - How can the exotic Higgs decays program benefit?
 - Are inclusive VBF trigger feasible?
- Data scouting or almost trigger-less event selections are not widely used to extend the Higgs program
 - Do we need to advertise this better?
 - How can data scouting increase our discovery potential?

Higgs exotic decays at future colliders

- What collider for what signature?

- Maximize number of Higgses produced to study ultra-rare but spectacular decays at high-energy hadron collider
- Which exotic decays need to be studied at a very clean lepton collider?
- Can any of the models be confirmed/ruled out by very precise measurements of Higgs couplings at a Higgs factory?



- Are there concrete **benchmarks** we should aim for to motivate these experiments?
- What types of future discoveries at the LHC (or other experiments) are connected to exotic Higgs decays, and how?
- Given the discovery of an exotic Higgs decay, how would one find the right model?