
VBF + VH

Inputs from ATLAS

J. Nielsen

University of California, Santa Cruz

E. Pianori

University of Warwick

Associated Higgs Production (WH, ZH)

- Excellent theory-experiment connection so far. Would like to improve on:
- Calculations in new channels and fiducial regions
 - Calculations of differential cross sections at highest p_T , including merged jets from Higgs decay
 - Special consideration for VH contributions in other channels beyond Hbb, Htt, HWW
 - Study of higher-order effects in invisible Higgs decay channels in comparison to SM VH
- Connections to coupling variations
 - Explore form of coupling variation corrections along the lines of Englert et al. in arXiv:1310.4828
 - Recalculate coupling variation corrections for 8 TeV and 13 TeV (currently only 14 TeV)
- Tools
 - are all generators using the latest agreement on data format? [Les Houches Accord #3]

VBF production

- EWK corrections, included via Higgs pT re-weighting
 - current analysis are stat. dominated, EWK corr not important. How about in RunII?
 - Best to have (N)NLO QCD and NLO EWK MC matched with PS. Validation?
- Higgs interference effect with continuum background
 - never looked at in VBF
- Higgs coupling and tensor structure in VBF
 - coordinate work with WG2 to study Higgs coupling in HVV and tensor structure
 - which MC tools to describe anomalous couplings?