

Future of VBF measurements

Wednesday, September 21, 2016 - Friday, September 23, 2016

Durham

Scientific Program

The workshop will concentrate on four different topics:

Extraction of the VBF signal

Precision VBF measurements

Higgs VBF measurement

Novel VBF searches

Session 1: VBF signal extraction and associated data-driven background constraints

Experimental input:

Lessons from ATLAS for VBF W/Z

Multivariate techniques in Higgs boson studies

Theory input:

Modelling of non-VBF processes

Signal/background interference

EW corrections to signal/background processes

Session 2: Precision measurements of VBF Standard Candle Processes

Experimental input:

experimental VBF W/Z results

Theory input:

can we extract VBF processes cleanly (EWK vs EWK+QCD measurements)

observables of interest

Session 3: Higgs properties in VBF

Experimental input:

ATLAS measurement of CP-invariance in H->tautau

ATLAS measurement of CP-properties in H->yy

General discussion: pros and cons of previous approaches

Theory input:

What can VBF do for Higgs measurements?

Session 4: Novel searches for new physics via VBF:

Theory input

the dark sector [input on DM, dark energy?, simplified model vs EFT in VBF, etc]

lepton flavour/number violation in VBF processes?

the CONTUR method

From FeynRules -> MC: what is possible and what is not.