Phenomenology 2014 Symposium



Contribution ID: 170

Type: not specified

Probing the Higgs-vector coupling with same-sign W bosons

Monday, 5 May 2014 14:45 (15 minutes)

We explore the sensitivity of the $pp \rightarrow W^{\pm}W^{\pm}jj$ process to deviations of the Higgs-vector coupling from its SM value. Since the Higgs-mediated contribution does not depend on other Higgs couplings and is independent of the total Higgs width to a good approximation, we can probe the Higgs-vector coupling directly. In the standard model, the Higgs channel does not give a sizeable contribution to the pure electroweak process at $\sqrt{s} = 14$ TeV. However, we show that a set of optimized cuts and kinematic observables would allow us to set a stringent upper bound on enhanced Higgs-vector couplings by the end of the High Luminosity LHC run with $\sim 3 \text{ ab}^{-1}$ of data.

Primary authors: BISHARA, Fady (U. of Cincinnati & Fermilab); YU, Felix (Fermilab); HARNIK, Roni (Fermilab)

Presenter: BISHARA, Fady (U. of Cincinnati & Fermilab)

Session Classification: SM Higgs I