

# Double Higgs Production in the Vector Boson Fusion Channel

*Monday, August 28, 2017 6:00 PM (30 minutes)*

The LHC experiments have, so far, measured many of the Higgs couplings and found excellent agreement with the minimally-realized electroweak symmetry breaking (EWSB) mechanism in the Standard Model. Nevertheless, there are important couplings that are currently out of reach which test the nature of EWSB and fermion mass generation. This talk will focus on one such coupling: the  $hhVV$  coupling. This is important because deviations of the  $hhVV$  coupling from the SM would signal non-linearities in the Higgs interactions and herald new physics at higher energies. As I will show, double Higgs production in VBF at the LHC can provide such a test at the 20% level by the end of the high luminosity run while a percent level constraint can be obtained at a future circular collider.

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**Session Classification:** Higgs physics and searches