



HEP 2013
Stockholm
18-24 July 2013



Contribution ID: 652

Type: **Talk presentation**

NLO QCD corrections to the production of $W+W+jj$ in vector-boson fusion at the LHC

Friday 19 July 2013 10:15 (15 minutes)

Vector-boson fusion processes involving the scattering of vector bosons constitute an irreducible background to Higgs-boson production in association with two jets, as they share the same kinematical characteristics. It is therefore desirable

to obtain accurate theoretical predictions and error estimates for these background processes with accuracy that goes beyond the leading order.

I show an efficient method for calculating the next-to-leading-order QCD corrections to both resonant and non-resonant contributions to the vector boson fusion processes and present results for a class of processes associated with production of two W^+ , including the complete set of electroweak leading-order diagrams for the six-particle final state and quantitatively assessing the size of the s-channel and interference contributions in VBF kinematics.

The QCD corrections stay below about 10% for all considered observables, while the residual scale dependence is at the level of $\sim 1\%$.

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Session Classification: QCD

Track Classification: QCD