

Vector boson pair production at the LHC: NLO QCD corrections to the loop-induced gluon fusion channel

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We consider the QCD cross section for vector boson pair production at the LHC, including off-shell effects, interferences and leptonic decays. The loop-induced gluon fusion production is quantitatively relevant in this process despite the fact that it enters at the second order in the QCD coupling. We present new results for the NLO corrections to the gluon fusion contribution for ZZ and WW production, including, for the first time, the qg partonic channel. Together with the NNLO corrections to quark-antiquark annihilation, we obtain an approximate N3LO prediction for these processes. The computation is carried out within the MATRIX framework.

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