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Anomalous triple-gauge-boson interaction in vector-boson pair production with Recola2

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Diboson production processes are of great importance in high-energy physics. On one hand, they are sensitive to the gauge-boson self interaction so that their measurement is a crucial test of the Standard Model (SM) description of the gauge-boson dynamics. On the other hand, diboson production at the LHC is a source of background for other SM processes as well as for direct New Physics (NP) searches. Therefore a precise theoretical knowledge of these processes is mandatory not only in view of precision tests of the SM but also in the one of the NP searches.

We compute the NLO QCD and NLO electroweak corrections to diboson production processes at the LHC including the effect of the anomalous triple-gauge-boson interactions at NLO QCD accuracy. The anomalous triple-gauge-boson interactions are parametrized in terms of higher-dimension operators in the effective field theory (EFT) framework. Our calculation is the first application of Recola2 to EFT models.

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