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Study of LHC experiments sensitivity to anomalous quartic gauge couplings in $Z\gamma\gamma$ production during Run2

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Run2 sensitivity to quartic anomalous gauge couplings was estimated for ATLAS experiment at LHC with increased energy of proton-proton collisions $\sqrt{s} = 13$ TeV and expected 40 fb^{-1} (2016) and 100 fb^{-1} (2016-2017) of integral luminosity. Simulation of $Z\gamma\gamma$ process with anomalous $ZZ\gamma\gamma$ and $Z\gamma\gamma\gamma$ couplings was performed using VBFNLO MC generator. Differential distributions on four body invariant mass of final state particles was used for extraction of expected limits on Effective Field Theory parameters f_{T0}/Λ^4, f_{T5}/Λ^4, f_{T9}/Λ^4, f_{M2}/Λ^4, f_{M3}/Λ^4. Combined limits are obtained from two charged leptonic decay channels of Z boson ($Z\gamma\gamma \to l^+l^-\gamma\gamma$, where $l = e$ or μ). Unitarity of expected limits was studied using dipole form factor.

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