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Measurement of multi-boson production and anomalous gauge boson couplings with the ATLAS detector

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ATLAS measurements of multi-boson production processes involving combinations of W, Z and isolated photons are summarized. Measurements using 7 TeV and at 8 TeV p-p collision data are presented. The measurements are performed using leptonic decay modes, including the invisible decay Z–> nunu, as well as semileptonic channels. Differential and total cross sections are presented and are used to place constraints on anomalous triple-gauge boson couplings. An overview of these results is given. The productions of multi-bosons in association with two forward jets at LHC are sensitive to quartic couplings between gauge bosons. We present the latest results of cross section measurements of multi-bosons and limits on anomalous quartic couplings (aQGC) using 8 TeV proton-proton collision data at ATLAS. The aQGC expected sensitivity of tri-bosons and vector boson scattering measurements for future high-luminosity LHC runs is discussed as well.

Summary

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