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Measurement of the diboson production cross section at 8TeV and 13TeV and limits on anomalous triple gauge couplings with the ATLAS detector

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Measurements of the cross sections of the production of pairs of electroweak gauge bosons at the LHC constitute stringent tests of the electroweak sector of the Standard Model and provide a model-independent means to search for new physics at the TeV scale.

The ATLAS collaboration has performed new measurements of integrated and differential cross sections of the production of heavy di-boson pairs in fully-leptonic and semi-leptonic final states at centre-of-mass energies of 8 and 13 TeV. We present in particular new measurements of WW, WZ and Z+photon cross sections in semi-leptonic or hadronic decays using standard or boosted technologies and new measurements of the inclusive and differential ZZ cross section at 13 TeV in various decay modes. In addition, the invariant mass of four leptons is measured at 13 TeV over a larger range, covering several production modes.

The results are compared to predictions at NLO (and NNLO) in pQCD and provide constraints on new physics, by setting limits on anomalous triple gauge couplings.

Experimental Collaboration

ATLAS

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