

# Measurements of W, Z and Drell-Yan processes in ATLAS

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The study of single W and Z boson production at the LHC provides stringent tests of the electroweak theory and perturbative QCD. The ATLAS experiment has measured the W boson production cross section in the LHC data collected in 2022 at 13.6 TeV. By forming ratios of Z, W, and  $t\bar{t}$  production cross sections, this measurement becomes a sensitive probe of the quark and gluon content of the proton. Measurements of the transverse momentum of the W and Z boson at 5 and 13 TeV from dedicated LHC runs with reduced instantaneous luminosity are also presented. A search for exclusive hadronic decays of the W boson to single pions, Kaons or rho-mesons in association with a photon are highlighted, and provide a test bench for the quantum chromodynamics factorization formalism. Differential cross sections as functions of mass and rapidity are presented for the neutral current Drell-Yan process in the invariant mass regions below and above the Z-boson peak.

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