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Measurements of inclusive W and Z cross sections at 13 TeV with the ATLAS detector (WG1)

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Precision measurements of the Drell-Yan production of W and Z bosons at the LHC provide a benchmark of our understanding of perturbative QCD and electroweak processes and probe the proton structure in a unique way.

The ATLAS collaboration has performed these measurements at a center-of-mass energy of 13 TeV. Ratios of W and Z cross sections and of the W boson charges significantly reduce experimental uncertainties.

In addition, ratios of the cross sections for the production of single Z bosons and top-quark pairs have been derived at various center-of-mass energies.

The measurements are compared to state-of-the-art calculations at NNLO in QCD, combined with various contemporary parton distribution functions and including higher-order electroweak effects.

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Track Classification: Structure Functions and Parton Densities