



Contribution ID: 58

Type: **not specified**

Differential measurements of the Drell-Yan cross-sections

Tuesday 17 April 2018 12:10 (20 minutes)

Measurements of the Drell-Yan production of W and Z/γ bosons at the LHC provide a benchmark of our understanding of perturbative QCD and probe the proton structure in a unique way. The ATLAS collaboration has performed high precision measurements at center-of-mass energies of 7 and 8 TeV. The measurements are performed for W^+ , W^- and Z/γ bosons integrated and as a function of the boson or lepton rapidity and the Z/γ mass. ATLAS also performed a precise triple differential cross-section measurement as a function of M_{ll} , dilepton rapidity and $\cos\theta^*$ defined in the Collins-Soper frame. This measurement provides sensitivity to the PDFs and the Z forward-backward asymmetry, AFB.

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Session Classification: WG1: Structure Functions and Parton Densities

Track Classification: WG1: Structure Functions and Parton Densities