

High Precision Measurement of the differential W and Z boson cross-sections

Monday, 28 August 2017 16:30 (30 minutes)

Measurements of the Drell-Yan production of W and Z/gammaposons 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 new high precision measurements at center-of-mass energies of 7. The measurements are performed for W^+ , W^- and Z/gamma bosons integrated and as a function of the boson or lepton rapidity and the Z/gamma* mass. Unprecedented precision is reached and strong constraints on Parton Distribution functions, in particular the strange density are found.

Z cross sections are also measured at a center-of-mass energies of 8TeV and 13TeV, and cross-section ratios to the top-quark pair production have been derived. This ratio measurement leads to a cancellation of several systematic effects and allows therefore for a high precision comparison to the theory predictions.

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Session Classification: Hard QCD and EW