



Contribution ID: 26

Type: **Oral presentation**

Probing the Electroweak Sector and QCD with the ATLAS Detector

Friday, 6 July 2018 11:30 (30 minutes)

This abstract is for a plenary talk.

The large integrated luminosities that are available at the LHC, allow to test the electroweak sector of the Standard Model as well as QCD calculations to highest precision. In this talk we cover both aspects, starting with the latest results from the ATLAS collaboration involving jets, dijets, photons in association with heavy flavors and vector bosons in association with jets, measured at center of mass energies of 8 and 13 TeV. All measured cross-sections are compared to state-of-the art theory predictions. Furthermore, we report on the latest results of di-boson and multiboson final states as well as the corresponding limits on anomalous gauge couplings. Another approach to test the consistency of the electroweak sector is via precision measurements. Here we report on the measurement of the tau-polarization in Z events, the W boson mass as well as a three dimensional cross-section measurement of the Drell-Yan process, allowing for the determination of the weak mixing angle.

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Session Classification: Main Conference Session