Contribution ID: **536** Type: **Parallel contribution**

Measurement of the ZZ production cross section in proton-proton collisions at 7 TeV with the ATLAS detector

Friday, August 12, 2011 12:10 PM (20 minutes)

A measurement of the ZZ production cross section in proton-proton collisions at sqrts=7TeV using data collected by the ATLAS experiment at the LHC is presented. In a data sample corresponding to an integrated luminosity of 1.02 ifb, 12 candidate events of purely leptonically decaying Z bosons with electrons and/or muons in the final state were observed. The expected background contribution is 0.3−0.3+0.9ext(stat)−0.3+0.4ext(syst) events. The total cross section for on-shell ZZ production has been determined to be sigmaZZmathrm-tot=8.4−2.3+2.7ext(stat)−0.7+0.4ext(syst)pm0.3extrm(lumi)pb and is in agreement with the Standard Model expectation of 6.5−0.2+0.3 pb calculated at the next-to-leading order in QCD. Limits on anomalous neutral triple gauge boson couplings are derived.

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Session Classification: Electroweak Physics

Track Classification: Electroweak Physics