Contribution ID: **683** Type: **Oral (Student, In Competition) / Orale (Étudiant(e), inscrit à la compétition)**

Measurement of the yy -> WW cross-section and searches for anomalous quartic gauge couplings WWAA at the ATLAS experiment

Monday 15 June 2015 14:45 (15 minutes)

Searches for the anomalous quartic gauge coupling of two photons to two W bosons (WWAA) were made at LEP and Tevatron. More recently many searches have been performed by the CMS and ATLAS collaborations at the Large Hadron Collider (LHC). Among the processes sensitive to these couplings are the Wy and yy -> WW production. In hadron colliders, yy -> WW events where the W bosons decay into leptons (electrons, muons or taus that subsequently transform into electrons or muons) have a clean signature. The two charged leptons originate from a vertex devoid of other outgoing particles, because they are produced by an electroweak interaction. Isolating the lepton vertex from other tracks suppresses strong interactions that produce many extra charged particles including higher cross-section processes such as Drell-Yan and top production. In this talk, I will present the measurement of the yy -> WW cross-section and searches for the WWAA anomalous quartic gauge couplings using the data collected by the ATLAS experiment during 2012.

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Session Classification: M1-8 Energy frontier: Standard Model and Higgs Boson I (PPD) / Frontière d'énergie: modèle standard et boson de Higgs I (PPD)

Track Classification: Particle Physics / Physique des particules (PPD)