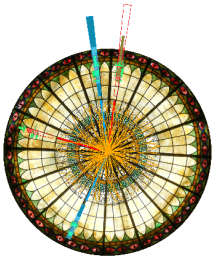
DIS 2015
XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects

Dallas, Texas
April 27 – May 1, 2015



Contribution ID: **207** Type: **not specified**

Precision measurements of Standard Model parameters with the ATLAS detector

Tuesday, 28 April 2015 14:35 (17 minutes)

The ATLAS Collaboration is engaged in precision measurement of fundamental Standard Model parameters, e.g. the weak-mixing angle and the complete set of coefficients that describe the angular distributions of Drell-Yan production. A measurement of the forward-backward asymmetry for the neutral current Drell Yan process is presented and the results are then used to extract a measurement of the effective weak mixing angle. This measurement shows significant sensitivity to the uncertainties of the parton density functions of the proton. The angular distributions of the Drell-Yan lepton pairs around the Z-boson mass peak probe the underlying QCD dynamic of the Z-boson production mechanisms. We present a measurement of the complete set of angular coefficients describing these distributions using 8 TeV centre-of-mass energy. The measurement is compared with the theoretical predictions and shows discrimination power between different approaches of the QCD modeling.

Presenter: BRANDT, Gerhard Immanuel (Georg-August-Universitaet Goettingen (DE))

Session Classification: WG3:Electroweak Physics and Beyond the Standard Model

Track Classification: WG3 Electroweak Physics and Beyond the Standard Model