



Contribution ID: 55

Type: Poster

Z0 forward-backward asymmetry measurement and extraction of $\sin^2\theta_W$ in $pp \rightarrow Z/\gamma^* \rightarrow \mu^+\mu^-$ events with the ATLAS experiment at LHC

Wednesday, 11 April 2012 19:00 (20 minutes)

The V-A nature of the electroweak current leads to an asymmetry in the lepton polar angle distribution in the rest frame of Z/γ^* : the measurement of such a quantity, around the Z pole, can provide a precise determination of the weak mixing angle of the Standard Model and other parameters of the electroweak theory, such as the A_{μ} coupling of the muon to the Z. In this contribution, the asymmetry measurement in the muon channel will be presented with data collected with the ATLAS experiment during 2011 together with the measurement of the weak mixing angle obtained from the asymmetry distribution around the Z pole.

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Session Classification: Sessione poster

Track Classification: Fisica del Modello Standard e oltre