

Studies of PDF sensitivity relevant for ATLAS measurements (20+10min)

Wednesday 2 September 2015 14:10 (30 minutes)

Several measurements performed by the ATLAS collaboration are either useful to constrain the proton structure or are affected by its associated uncertainties.

The strange-quark density is rather poorly known at low x . Measurements of the $W+c$ production and the inclusive W and Z differential cross sections are found to constrain the strange-quark density. Drell-Yan cross section measurements performed above and below the Z peak region have a different sensitivity to parton flavour, parton momentum fraction x and scale Q compared to measurements on the Z peak and can also be used to constrain the photon content of the proton.

Measurements of the inclusive jet and photon cross sections are standard candles and can be useful to constrain the medium and high x gluon densities.

Precision electroweak studies performed by ATLAS can be limited by the current knowledge on the proton structure. Among those are the measurement of the effective weak mixing angle and the mass of the W boson. Dedicated PDF studies were performed by ATLAS to evaluate the impact of PDF uncertainties in these measurements.

Author: PADILLA ARANDA, Cristobal (IFAE-Barcelona (ES))

Presenter: HANNA, Remie (CEA/IRFU,Centre d'étude de Saclay Gif-sur-Yvette (FR))

Session Classification: HardQCD+PDFs: Joint session

Track Classification: PDFs