



Contribution ID: 173

Type: **not specified**

Determination of electroweak parameters using H1 inclusive DIS data

Tuesday, April 17, 2018 9:20 AM (20 minutes)

An improved determination of electroweak (EW) parameters using H1 inclusive neutral current and charged current DIS cross sections is presented. The analysis benefits from the usage of the previously published cross sections using longitudinally polarised lepton beams. The parameters are determined in a combined fit of EW parameters together with PDFs. The predictions include NNLO QCD corrections for the PDF and structure function calculations, and the corrections at the leptonic vertex are obtained in the on-shell scheme including the full set of 1-loop corrections. The analysis determines the weak neutral-current couplings of the light quarks and thus tests potential contributions beyond the SM. The mass of the W-boson is determined and a precision of 115 MeV is achieved.

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Session Classification: WG1: Structure Functions and Parton Densities

Track Classification: WG1: Structure Functions and Parton Densities