



Contribution ID: 151

Type: **not specified**

Combined H1 and ZEUS inclusive data and QCD fits

Saturday, 3 September 2016 16:20 (20 minutes)

A combination of all inclusive deep inelastic cross sections published by the H1 and ZEUS collaborations at HERA-I and HERA-II, for neutral and charged current $e^{\pm}p$ scattering, is presented. This supersedes the combination of HERA-I data published in 2010. The combined cross sections were input to QCD analyses at LO, NLO and NNLO in order to extract new parton distribution functions (PDFs) called HERAPDF2.0. The analysis was extended by including HERA data on charm production and jet production. This made a simultaneous extraction of the PDFs and the strong coupling parameter possible at NLO, resulting in the value: $\alpha_s(M_Z) = 0.1183 \pm 0.0009(\text{exp}) \pm 0.0005(\text{model/param.}) \pm 0.0012(\text{hadronisation}) + 0.0037/-0.0030(\text{scale})$.

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Session Classification: Diffraction in ep collisions (II)

Track Classification: Diffraction in e-p collisions (experiment/phenomenology/theory)