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Combination and QCD Analysis of the HERA F_2^{cc} Results

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Combination of F_2^{cc} from DIS measurements at HERA

The charm contribution F_2^{cc} to the proton structure function F_2 is determined. The results of D meson production cross section measurements are combined with the measurements using semi-leptonic decays into muons as well as inclusive track measurements. The correlations of the systematic uncertainties between different measurements are taken into account. The data cover the kinematic range of photon virtuality $2 < Q^2 < 1000 \text{ GeV}^2$ and Bjorken scaling variable $10^{-5} < x < 10^{-1}$.

PDF fits including F_2^{cc} data

The combined H1 and ZEUS data on inclusive ep cross-sections together with the combined data on the semi-inclusive structure function $F_2(\text{charm})$ are used to extract the parton densities of the proton at NLO. The inclusion of the $F_2(\text{charm})$ data allows detailed tests of the heavy flavour treatment in various QCD calculations.

Primary author: THE H1 AND ZEUS COLLABORATIONS

Presenter: CORRADI, Massimo (INFN, Sezione di Bologna)

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