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Inclusive DIS at HERA and PDF fits

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Summary

Recent results on deep-inelastic scattering at HERA are presented. The H1 and ZEUS experiments each have determined new measurements of the proton longitudinal structure function FL, making use of the HERA data recorded at reduced centre-of-mass energies. The results are in agreement with each other and with predictions derived from QCD fits. The region of high x is explored in a dedicated measurement by the ZEUS collaboration. All HERA inclusive data published up to now by H1 and ZEUS are combined, taking into account the experimental correlations between measurements. As a result, a combined dataset is obtained. It includes measurements of neutral current and charged current cross sections recorded at different centre-of-mass energies, spanning up to six orders of magnitude both in momentum transfer Q^2 and in Bjorken-x. The dataset is superior in precision compared to the previous HERA data combination which included a smaller fraction of the total integrated luminosity collected at HERA. Point-to-point uncorrelated uncertainties better than 1% are observed in certain kinematic regions.

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