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Inclusive deep-inelastic scattering at HERA

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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 F_L , 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.

Summary

Primary author(s) : DAUM, Karin (DESY); SCHMITT, Stefan (DESY)

Presenter(s) : Dr. CHEKELIAN, Vladimir (MPI for Physics)

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