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HERAPDF fits of the proton parton densities

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New combined H1 and ZEUS data on neutral and charged current inclusive cross sections at HERA from all running periods 1994-2007, are used as the sole input to NLO and NNLO QCD analyses to determine new sets of parton distributions, HERAPDF2.0, with small experimental uncertainties and an estimate of model and parametrisation uncertainties. Charm and jet production data are also included in the fit to improve, in particular, the determination of the gluon density and the strong coupling, α_s . A HERAPDF fit, evolved in leading order (LO) in α_s using the DGLAP evolution equations, is also presented. The LO PDF is particularly useful for Monte Carlo event generators based on LO matrix elements plus parton showers.

Summary

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