Deeply Inelastic Scattering: Achievements and Needs

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Abstract. We discuss the present status of deeply inelastic scattering and possible developments needed to further complete the picture on the short–distance structure of nucleons.

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After a historic introduction to the field of deeply inelastic scattering, its contributions to the present understanding of the Standard Model are discussed. The experimental and theoretical achievements reached are outlined in detail both for unpolarized and polarized deep-inelastic scattering. Finally, the open questions of the field are addressed concerning future important measurements and the solution of a series of theoretical problems. Possible new measurements at present and upcoming facilities are discussed. There is preference for *high luminosity* facilities in optimal ranges of Q^2 and x to improve the current experimental accuracies considerably and to allow for the measurement of a series of observables, which cannot be accessed otherwise. Precision results from deeply inelastic scattering will play a key role in understanding the physics at LHC. Details of the contribution are given in Ref. [1].

REFERENCES

1. J. Blümlein, Proceedings of the *First Workshop on Quark-Hadron Duality and the Transition to pQCD*, Frascati, Italy, June 2005.