May 25th 1996
Abstract pa02-078 submitted to the 28th International Conference on High Energy Physics ICHEP'96, Warsaw, Poland, July 1996

Differential Cross-sections for e^-p and e^+p interactions at very high Q^2

H1 Collaboration

Abstract

Recent measurements of differential cross-sections obtained at very high 4-momentum transfer squared Q^2 by the H1 Collaboration are reported using electron-proton (e^-p) and positron-proton (e^+p) interaction data collected at the HERA collider. The cross-sections for neutral current and charged current interactions are of similar magnitude when Q^2 reaches the squared mass of the W boson, demonstrating the equivalent strength of the electromagnetic and weak interactions in this domain. Using the e^+p charged current interactions collected in 1994 and 1995, the distributions in the scaling variables Bjorken-x and y are used to discriminate between the quark and antiquark densities in the proton because of the different helicity dependence, manifest in the different y dependence, of the electroweak coupling.

Plenary Sessions:
9. Status of the Electroweak Interaction - A. Blondel, S. Pokorski
Parallel Session: I Strong Interaction Physics
2. Soft Interactions
3. Structure Functions and Low x Physics
4. Hard Processes and Perturbative QCD
Parallel Session: II Electroweak Interaction Physics
7. Tests of the Standard Model