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The Transverse Momentum Evolution of the W^2 dependence of Inclusive Charged Particle Photoproduction at HERA

H1 Collaboration

Abstract

The dependence on centre of mass energy squared W^2 of the cross section for the inclusive photoproduction of charged particles is measured using 2.6 pb^{-1} of ep interaction data collected by the H1 experiment at HERA in 1994. As a function of the maximum transverse momentum $p_{t,max}$ of charged particles produced in the photon fragmentation region, the slope of the W^2 dependence is observed to increase steeply as a function of the momentum transfer squared scale ($\propto p_{t,max}^2$). The result is compared both with the measurement of the slope of the W^2 dependence of the virtual photon-proton cross section in deep-inelastic ep scattering as a function of Q^2 and with Monte Carlo models. Interpretations in terms of QCD and in terms of Regge phenomenology are considered.

Plenary Sessions:
2. Soft Interactions and Diffraction Phenomena - S. Levonian
4. QCD and Low x Physics - H. Abramowicz, R. Brock
Parallel Session: I Strong Interaction Physics
2. Soft Interactions
3. Structure Functions and Low x Physics
4. Hard Processes and Perturbative QCD