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Leading Neutron Production in Deep-Inelastic *ep* Scattering at HERA

H1 Collaboration

Abstract

Events with an energetic final state neutron have been observed in deep-inelastic ep collisions recorded by the H1 experiment at the ep collider HERA. The data were collected in 1995 for 4-momentum transfers squared Q^2 between $2.5\,\mathrm{GeV}^2$ and $65\,\mathrm{GeV}^2$ and for Bjorken-x between 2×10^{-5} and 0.03. The yields of neutrons with momenta between 400 GeV and about 810 GeV in the direction of the incident proton beam are measured for all events, and for diffractive events, taken to be for $x_{\mathbb{P}} \leq 0.05$. The results are compared with expectation based on simulations of deep-inelastic proton diffractive and charge exchange interactions.

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