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Elastic Electroproduction of ρ and J/ψ Mesons at large Q^2 at HERA

H1 Collaboration

Abstract

The total cross sections for the elastic electroproduction of ρ and J/ψ mesons for $Q^2 > 8\,\mathrm{GeV}^2$ and $\langle W \rangle \simeq 90\,\mathrm{GeV}$ are measured at HERA with the H1 detector. The measurements are for an integrated electron-proton luminosity of $\simeq 3\,\mathrm{pb}^{-1}$. The dependences of the total virtual photon-proton (γp) cross sections on Q^2, W and the 4-momentum transfer squared to the proton (t), and, for the ρ, the dependence on the polar decay angle ($\cos\theta^*$), are presented. The $J/\psi : \rho$ cross section ratio is determined. The results are discussed in the light of theoretical models and of the interplay of hard and soft physics processes.

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