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Measurement of Charged Particle Spectra in Deep-Inelastic ep Scattering at HERA

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Charged particle production in deep-inelastic *ep* scattering is measured with the H1 detector at HERA. The kinematic range of the analysis covers low photon virtualities, 5 < Qˆ2 < 100 GeVˆ2, and small values of Bjorken-x, 10ˆ{-4} < x < 10ˆ{-2}. The analysis is performed in the hadronic centre-of-mass system. The charged particle densities are measured as a function of pseudorapidity (\etaˆ*) and transverse momentum (p_Tˆ*) in the range 0<\etaˆ<*5 and 0*<p_Tˆ < 10 GeV differentially in x and Qˆ2. The data are compared to predictions from different Monte Carlo generators implementing various options for hadronisation and parton evolutions.
Charged particle production is also measured in deep inelastic ep scattering at sqrt{s}=225 GeV with the H1 detector at HERA. The kinematic range of the analysis covers low photon virtualities, 5 < Qˆ2 < 10 GeVˆ2, and medium to high values of inelasticity y, 0.35 < y < 0.8. The analysis is performed in the virtual photon-proton centre-of-mass system. The charged particle production cross sections is investigated double-differentially as a function of pseudorapidity etaˆ*and transverse momentum p_Tˆ* in the range 0 < etaˆ< *3 and p_Tˆ* < 10 GeV. The data are compared to different phenomenological models.

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