Abstract 275
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Inclusive D^0 and $D^{*\pm}$ Production in Deep–Inelastic Scattering at HERA

H1 Collaboration

Studies of inclusive D^0 and $D^{*\pm}$ production in deep–inelastic ep scattering are reported for momentum transfers squared Q^2 between 4 GeV^2 and 100 GeV^2. Differential cross sections are presented and are compared with NLO QCD predictions which are based on the boson-gluon fusion process including massive quark effects. The data make possible a search for the non–perturbatively generated charm sea in the proton. Measurements of the charm contribution $F_2^{c\bar{c}}(x, Q^2)$ to the proton structure function for Bjorken x between $6 \cdot 10^{-4}$ and $7.5 \cdot 10^{-3}$ and of the diffractive contribution to charm production in deep–inelastic ep scattering are also presented. The first results of a direct determination of the gluon density distribution in the proton using events in which charm decays are exclusively reconstructed are presented.