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Heavy Flavor production at HERA with ZEUS

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The production of D+, *D0, D+, D+_s and lambda_c+ charm hadrons in ep scattering at HERA was measured with the ZEUS detector using the full HERA II data sample. The measurement has been performed in the photoproduction regime. The fractions of c quarks hadronising as a particular charm hadron, f(c-> D,lambda_c) were derived and are compared*
to the previous HERA results and to those obtained in e+e- annihilations. Inclusive photoproduction of D mesons has also been measured with the ZEUS detector at HERA. The measurement was performed for photon-proton centre-of-mass energies in the range 130 < W < 285 GeV and photon virtuality Q2 < 1 GeV2. The D*mesons have been reconstructed from the decay channels D+ -> D0 pi_s+ with D0 -> K- pi+ or D0 -> K- pi+ pi+ pi- (+c.c.). Charm production has been measured with the ZEUS detector in deep inelastic ep scattering at HERA. The measurement is based on the full reconstruction of the decay chain D*->D0pis, D0->Kpi and exploits the full HERA II statistics. Differential cross sections have been measured and the charm contribution to the proton structure function, F2c, has been extracted. Charm production in deep inelastic scattering has also been measured. The hadronic decay channels D+ -> K0S pi+, Lambda_c+ -> p K0S and Lambda_c+ -> Lambda pi+, and their charge conjugates, were reconstructed. The presence of a neutral strange hadron in the final state reduces the combinatorial background and extends the measured sensitivity into the low transverse momentum region. The kinematic range is 0 < pT(D+,Lambda_c+) < 10GeV, |eta(D+,Lambda_c+)| < 1.6, 1.5 < Q2 < 1000GeV2 and 0.02 < y < 0.7. Inclusive and differential cross sections for the production of D+ mesons are compared to next-to-leading-order QCD predictions. The fraction of c quarks hadronising into Lambda_c+ baryons is extracted.

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