



Contribution ID: 45

Type: **not specified**

Measurement of charm production in DIS with D^* mesons and extraction of F_2^{cc}

Wednesday 28 March 2012 10:30 (18 minutes)

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 $D \rightarrow D^0 \pi^{\pm}$, $D^0 \rightarrow K^{\pm} \pi^{\mp}$ and exploits the full HERA II statistics. Differential cross sections have been measured. The kinematic range is $1.5 \text{ GeV} < p_T(D) < 10 \text{ GeV}$, $|\eta(D)| < 1.5$, $5 < Q^2 < 1000 \text{ GeV}^2$ and $0.02 < y < 0.7$. The observed cross sections is extrapolated to the full $p_T(D)$ and $\eta(D^*)$ range in order to determine the open-charm contribution, $F_2^{cc}(x, Q^2)$ to the proton structure function, F_2 .

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Session Classification: Combined: Heavy flavours/structure functions

Track Classification: Heavy flavours/structure functions