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## Measurement of Inclusive $D^*$ Meson and $D^*$ Meson Dijet Cross Sections in Photoproduction at HERA

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The inclusive photoproduction of  $D$  mesons and of  $D$ -tagged dijets is investigated with the H1 detector at the  $ep$  collider HERA. The kinematic region covers small photon virtualities  $Q^2 < 2 \text{ GeV}^2$  and photon-proton centre-of-mass energies of  $100 < W_{\gamma p} < 285 \text{ GeV}$ . Inclusive  $D^*$  meson differential cross sections are measured for central rapidities  $|\eta(D^*)| < 1.5$  and transverse momenta  $p_T(D^*) > 1.8 \text{ GeV}$ .

The heavy quark production process is further investigated in events with at least two jets with transverse momentum

$p_{Tj} > 3.5 \text{ GeV}$  each, one containing the  $D^*$  meson.

Differential cross sections for  $D^*$ -tagged dijet production and for correlations between the jets are measured in the range  $|\eta(D^*)| < 1.5$  and  $p_T(D^*) > 2.1 \text{ GeV}$ .

The results are compared with predictions from Monte Carlo simulations and next-to-leading order perturbative QCD calculations.

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