

Charm fragmentation and excited charm and charm-strange mesons at ZEUS

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The charm fragmentation function has been measured in D photoproduction with the ZEUS detector at HERA. The fragmentation function has been measured versus z , the ratio of $E+p_{\text{parallel}}$ for the D meson and that for the associated jet, where E is the energy and p_{parallel} the longitudinal momentum relative to the jet axis. The measured function is compared to different fragmentation models incorporated in leading-logarithm Monte Carlo simulations and a next-to-leading-order calculation. The results are similar to those from $e+e-$ experiments.

In addition, the production of excited charm, $D_{1(2420)0}$ and $D_{2^*(2460)0}$, and charm-strange, $D_{s1(2536)+/-}$, mesons has been measured with the ZEUS detector at HERA. The measured yields were converted to the rates of c quarks hadronising as a given excited D meson. The results are compared with those measured previously and with theoretical expectations.

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