

Production of the excited charm mesons $D1_0$ and $D2^*_0$ with ZEUS at HERA

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The production of the excited charm mesons $D1(2420)_0$ and $D2(2460)$ in ep collisions was measured with the ZEUS detector at HERA using an integrated luminosity of 373 pb^{-1} . The masses, widths and helicity parameters of these resonances were determined and compared with previous measurements, with theoretical expectations and with published ZEUS results of an independent sample with an integrated luminosity of 126 pb^{-1} . The measured $D01$ width is found to be above the world average value in both cases. The measured $D01$ helicity parameter allows for some mixing of S - and D -waves in its decay to $D\pi$; however the result is also consistent with the prediction for a pure D -wave decay.

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