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Charm and strange particles production at ZEUS

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Inclusive K0sK0s production in ep collisions at HERA was studied with the ZEUS detector using an integrated luminosity of 0.5 fb-1. Enhancements in the mass spectrum were observed and are attributed to the production of f2(1270)/a20(1320), f2'(1525) and f0(1710). Masses and widths were obtained using a fit which takes into account theoretical predictions based on SU(3) symmetry arguments, and are consistent with the PDG values. The f0(1710) state, which has a mass consistent with a glueball candidate, was observed with a statistical significance of 5 standard deviations. However, if this state is the same as that seen in gamma gamma->K0sK0s, it is unlikely to be a pure glueball state.

The production of excited charm, D_1(2420)ˆ0 and D_2ˆ{}(2460)ˆ0, and charm-strange, D_{s1}(2536)+/-, mesons in ep collisions was measured with the ZEUS detector at HERA using an integrated luminosity of 126 pbˆ-1. Masses, widths and helicity parameters were determined. The measured yields were converted to the rates of c quarks hadronising as a given excited charm meson and to the ratios of the dominant D_2ˆ{}(2460)ˆ0 and D_{s1}(2536)ˆ\pm branching fractions. A search for the radially excited charm meson, Dˆ*(2640)+/-, was also performed. The results are compared with those measured previously and with theoretical expectations.

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