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Light Mesons and Strange Particle Production at HERA

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Inclusive Photoproduction of rhoˆ0, Kˆ{0} and phi Mesons at HERA
Inclusive non-diffractive photoproduction of rho(770)ˆ0, Kˆ(892)ˆ0 and phi(1020) mesons is investigated with the H1 detector in ep collisions at HERA. The corresponding average gamma p centre-of-mass energy is 210 GeV. The mesons are measured in the transverse momentum range 0.5 < p_T < 7 GeV and the rapidity range |y_{lab}|<1. Differential cross sections are presented as a function of transverse momentum and rapidity, and are compared to the predictions of hadroproduction models.

Strangeness Production at low Qˆ2 in Deep-Inelastic ep Scattering at HERA
The production of neutral strange hadrons is investigated using deep-inelastic scattering events measured with the H1 detector at HERA. The measurements are made in the phase space defined by the negative four-momentum transfer squared of the photon 2 < Qˆ2 < 100 GeVˆ2 and the inelasticity 0.1 < y < 0.6. The K0_s and Lambda production cross sections and their ratios are determined. K0_s production is compared to the production of charged particles in the same region of phase space. The Lambda- anti-Lambda asymmetry is also measured and found to be consistent with zero. Predictions of leading order Monte Carlo programs are compared to the data.

K0_s Production at high Qˆ2 at HERA
The production of K0_s mesons is studied at high Qˆ2, using DIS events recorded with the H1 Detector. Using the full HERA-2 statistics, the production cross sections of K0_s are presented, differentially as a function of several kinematical variables. Moreover, the K0_s production rate is compared to the equivalent charged particles in a similar phase space. The H1 data are compared to theoretical predictions, based on leading order Monte Carlo programs with matched parton showers.

Scaled momentum spectra of identified particles in the Breit frame at HERA
Scaled momentum distributions of identified particles, K0S and Lambda, have been measured in deep inelastic ep scattering with the ZEUS detector at HERA using an integrated luminosity of 290 pbˆ-1. The evolution of these distributions with the photon virtuality, Qˆ2, are studied in the kinematic region 10 < Qˆ2 < 40000 GeVˆ2. The distributions have been measured in the current fragmentation region of the Breit frame. Next-to-leading-order QCD calculations including hadron-mass effects are compared to the data. The calculations reproduce the trends of the measured distributions as functions of Qˆ2 and the scaled momentum variable reasonably well.

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