



Contribution ID: 1183

Type: Parallel Session Talk

## Light Mesons and Strange Particle Production at HERA

Friday, 23 July 2010 09:15 (13 minutes)

### Inclusive Photoproduction of $\rho^0$ , $K^*0$ and $\phi$ Mesons at HERA

Inclusive non-diffractive photoproduction of  $\rho(770)^0$ ,  $K^*(892)^0$  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  $|y_{\text{lab}}| < 1$ . 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 $Q^2$ 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  $2 < Q^2 < 100$  GeV<sup>2</sup> 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 $Q^2$ at HERA

The production of  $K0_s$  mesons is studied at high  $Q^2$ , 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 pb<sup>-1</sup>. The evolution of these distributions with the photon virtuality,  $Q^2$ , are studied in the kinematic region  $10 < Q^2 < 40000$  GeV<sup>2</sup>. 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  $Q^2$  and the scaled momentum variable reasonably well.

**Primary author:** THE H1 AND ZEUS COLLABORATIONS

**Presenter:** ZAWIEJSKI, Leszek (Institute of Nuclear Physics PAN)

**Session Classification:** 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy

**Track Classification:** 04 - Hadronic Structure, Parton Distributions, soft QCD, Spectroscopy