Longitudinal Structure Function F_L at high Q^2

1 Figure captions

Figure 1. Control plots (scattered electron energy and polar angle, $E - P_z$) for the H1 e^-p data 98/99 in the region $90 < Q^2 < 900$ GeV^2, $0.63 < y < 0.90$, and $E'_e \geq 6$ GeV. The background is subtracted using wrong charge candidates.

Figure 2. Control plots (scattered positron energy and polar angle, $E - P_z$) for the H1 e^+p data 99/00 in the region $90 < Q^2 < 900$ GeV^2, $0.63 < y < 0.90$, and $E'_e \geq 6$ GeV. The background is subtracted using wrong charge candidates.

Figure 3. Study of the charge asymmetry of the fake electron candidates using tagged photoproduction events and wrong charge candidates in the H1 e^-p 98/99 and e^+p 99/00 data samples. The ratio of negative and positive fake candidates $(-/+)$ was found to be 1.0 ± 0.1 .

Figure 4. Reduced NC cross section $\tilde{\sigma}_{NC}$ for the H1 e^-p 98/99 data. The H1 preliminary results for extension to high $y = 0.75$ are shown as solid points and the standard analysis results (Desy Preprint 00-187) as open points. The low Q^2 H1 data 96/97 (Desy Preprint 00-181) are shown as open triangles. The red solid line represents calculation of the reduced cross section using parton densities from the H1 NLO QCD fit to the H1 e^+p 94/97 data and fixed target experiments data (H1 97 PDF Fit, Eur. Phys. J. C13 (2000) 609). $\tilde{\sigma}_{NC}$ for the extreme case of $F_L = 0$ is given by black dashed line.

Figure 5. Reduced NC cross section $\tilde{\sigma}_{NC}$ for the H1 e^+p 99/00 data. The H1 preliminary results for extension to high $y = 0.75$ are shown as solid points and the standard analysis results (H1 preliminary for ICHEP2000) as open points. The low Q^2 H1 data 96/97 (Desy Preprint 00-181) are shown as open triangles. The red solid line represents calculation of the reduced cross section using parton densities from the H1 NLO QCD fit to the H1 e^+p 94/97 data and fixed target experiments data (H1 97 PDF Fit, Eur. Phys. J. C13 (2000) 609). $\tilde{\sigma}_{NC}$ for the extreme case of $F_L = 0$ is given by black dashed line.

Figure 6. The longitudinal structure function $F_L(x, Q^2)$ obtained using the H1 e^-p 98/99 data (blue points) and the H1 e^+p 99/00 data (red points). Statistical and total errors are given as inner and outer error bars respectively. The yellow band represents the uncertainty of the F_L NLO QCD calculation using the H1 97 PDF Fit (Eur. Phys. J. C13 (2000) 609). The extreme cases of $F_L = 0$ and $F_L = F_2$ (from the H1 97 PDF Fit) are shown as solid and dashed lines.