Abstract 262
Parallel sessions: 3,4,7
Plenary sessions: 1,3,15

Measurement of the Neutral Current Inclusive ep Cross Section and the Proton Stucture Function $F_2(x, Q^2)$ at High Q^2 at HERA

H1 Collaboration

Measurements of the double differential cross-section $\mathrm{d}^2\sigma/\mathrm{d}x\mathrm{d}Q^2$ of the neutral current e^+p scattering process and of the proton structure function $F_2(x, Q^2)$ are reported. $F_2(x, Q^2)$ is derived from the cross section measurement assuming a QCD calculation for $xF_3(x, Q^2)$. The results are obtained for momentum transfer squared Q^2 between 150 and 15000 GeV^2, and for Bjorken x values up to 0.65 using data collected by the HERA experiment H1 in 94, 95 and 96. This data sample has allowed an increase in precision and an extension to higher x and Q^2 values by a factor 2 to 3 compared with previous measurements.