# 33. PLOTS OF CROSS SECTIONS AND RELATED QUANTITIES

**NOTE: THE FIGURES IN THIS SECTION ARE INTENDED TO SHOW THE REPRESENTATIVE DATA. THEY ARE NOT MEANT TO BE COMPLETE COMPILATIONS OF ALL THE WORLD'S RELIABLE DATA**

## Structure Functions

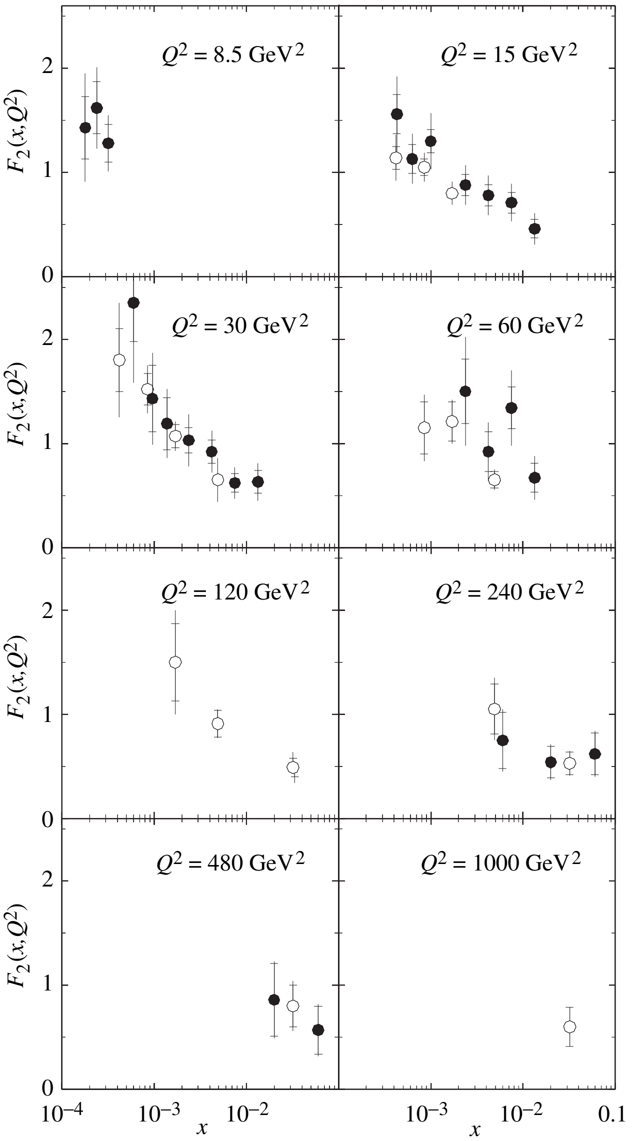


**Figure 33.1:** The proton structure function $F_2^p$ measured in electromagnetic scattering of 26.7 GeV electrons on 820 GeV protons by the HERA experiments, versus $x$, for fixed bins of $Q^2$. The closed symbols show H1 and the open symbols ZEUS data obtained with luminosities of 22.5 nb$^{-1}$ and 24.7 nb$^{-1}$, respectively. A QCD prescription for $R = \sigma_L/\sigma_T$ was used to extract the structure function from the measured cross sections. The inner error bars are statistical, the outer error bars are statistical and systematic errors combined in quadrature. An overall normalization error of $\approx 8\%$ is not shown in the figure. References: **H1**—I. Abt *et al.*, Nucl. Phys. **B407**, 515 (1993) and G. Bernardi, *Proceedings International Europhysics Conference on High Energy Physics*, (Marseille 1993), ed. by J. Carr and M. Perrottet; **ZEUS**—M. Derrick *et al.*, Phys. Lett. **B316**, 412 (1993). (Courtesy of M. Virchaux and R. Voss, 1994.)

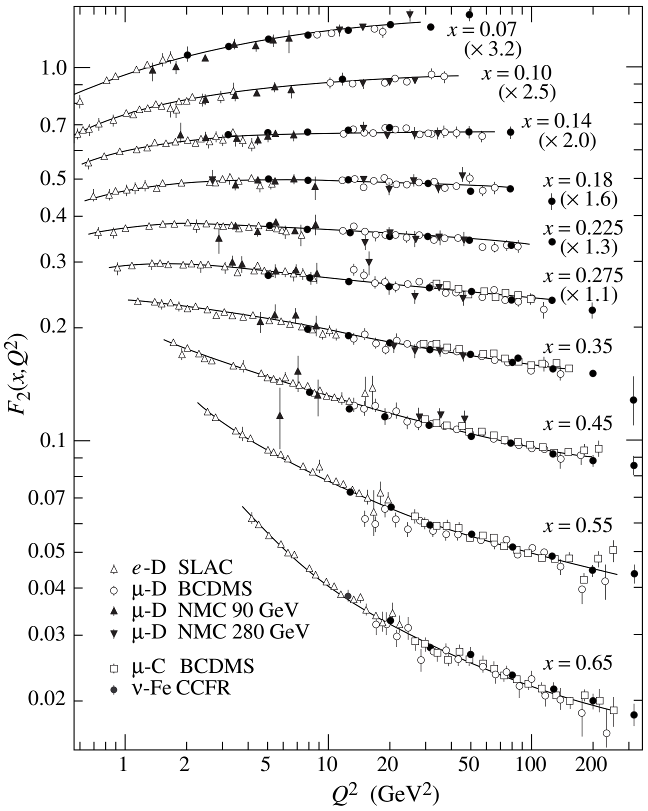


**Figure 33.2:** The nucleon structure function $F_2$ measured in deep inelastic scattering of electrons (SLAC), muons (BCDMS, NMC), and neutrinos (CCFR) on deuterium (BCDMS, NMC, SLAC), carbon (BCDMS C), and iron (CCFR Fe) targets. The data are shown versus $Q^2$, for fixed bins of $x$, and have been scaled by the factors shown in parentheses for convenience in plotting. The error bars show statistical and systematic errors combined in quadrature. The heavy target data were corrected for nuclear effects and the neutrino data for electromagnetic quark charges and the excess of the strange quark sea. The overall normalization of the BCDMS, CCFR, and NMC data has been adjusted by typically 1%. The solid line represents a perturbative QCD fit which includes a parameterization of higher twist effects (M. Virchaux and A. Milsztajn, Phys. Lett. **B274**, 221 (1992)). References: **BCDMS**—A.C. Benvenuti *et al.*, Phys. Lett. **B237**, 592 (1990); **BCDMS C**—A.C. Benvenuti *et al.*, Phys. Lett. **B195**, 91 (1987); **CCFR**—S.R. Mishra *et al.*, NEVIS-1465 (1992); **NMC**— P. Amaudruz *et al.*, Phys. Lett. **B295**, 159 (1992); **SLAC**—L.W. Whitlow *et al.*, Phys. Lett. **B282**, 475 (1992). (Courtesy of M. Virchaux and R. Voss, 1994.)