Structure Functions

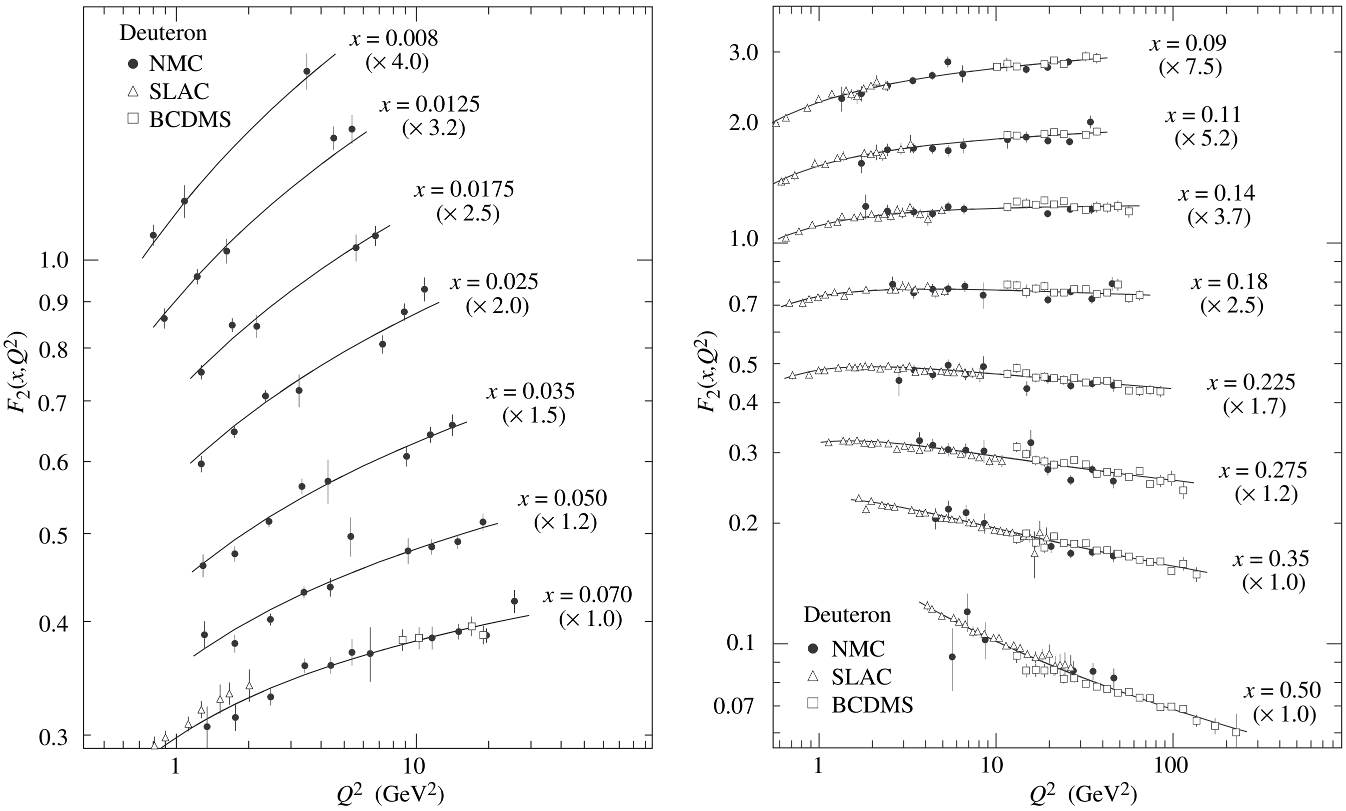

Figure 33.3: The deuteron structure function F_2^d measured in electromagnetic scattering of electrons (SLAC) and muons (BCDMS, NMC) on deuterium targets, versus Q^2, for fixed bins of x. The data have been scaled by the factors shown in parentheses for convenience in plotting. The error bars show statistical and systematic errors combined in quadrature. A phenomenological parameterization of $R = \sigma_L/\sigma_T$ (L.W. Whitlow *et al.*, Phys. Lett. **B250**, 193 (1990)) was used in the analysis of the SLAC and the NMC data and a QCD prescription for R in the analysis of the BCDMS data. Where necessary, the SLAC and BCDMS data were interpolated to the x bins of the NMC data; SLAC and BCDMS data at $x > 0.5$ are not shown in this figure. The solid lines represent a QCD inspired phenomenological fit. References: **BCDMS**—A.C. Benvenuti *et al.*, Phys. Lett. **B237**, 592 (1990); **NMC**—P. Amaudruz *et al.*, Phys. Lett. **B295**, 159 (1992); **SLAC**—L.W. Whitlow *et al.*, Phys. Lett. **B282**, 475 (1992). Similar data are available for the proton structure function F_2^p (**NMC** and **SLAC**—same references; **BCDMS**—A.C. Benvenuti *et al.*, Phys. Lett. **B223**, 485 (1989)). (Courtesy of M. Virchaux and R. Voss, 1994.)