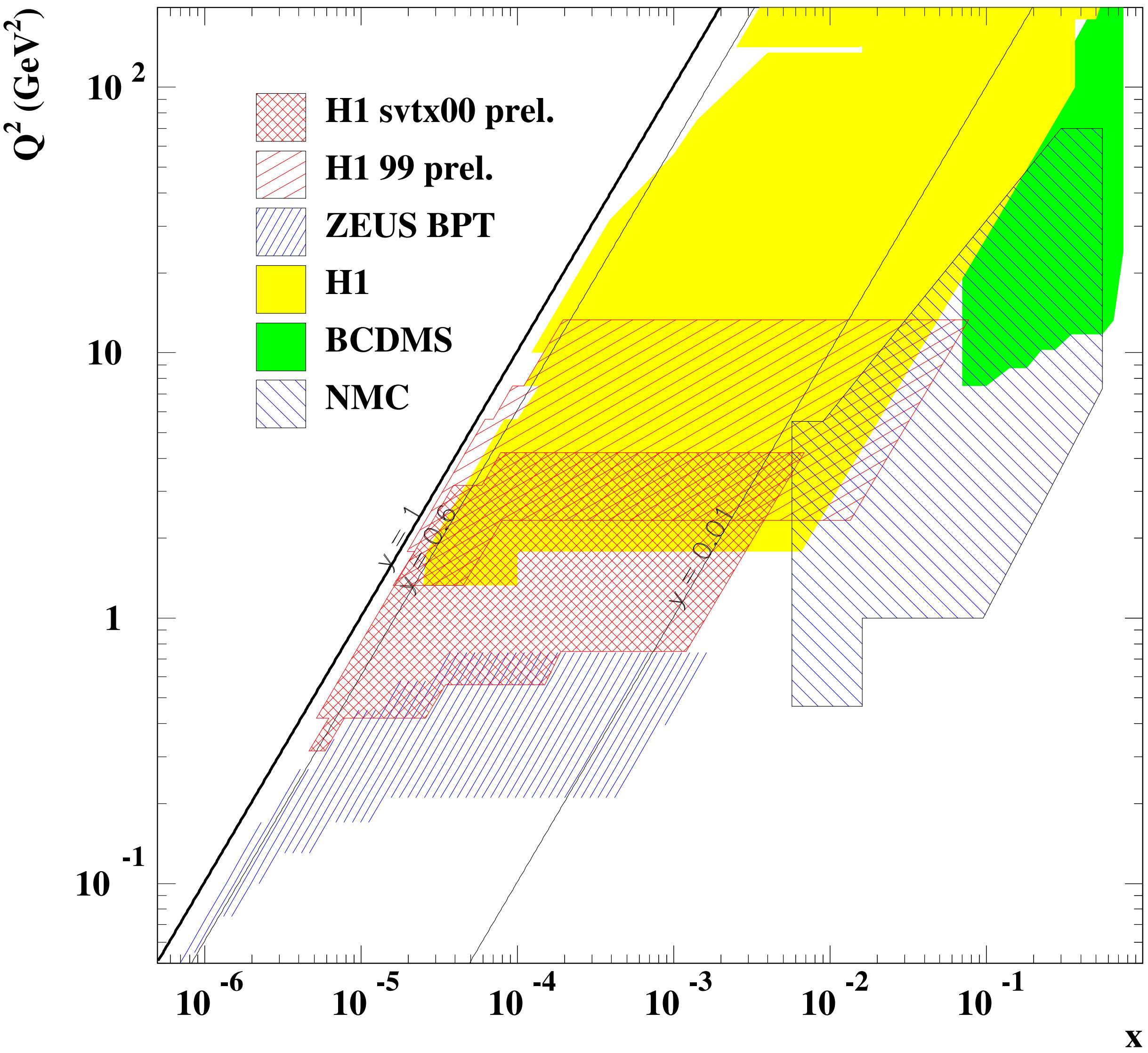

Figure 1: Kinematic region covered by the preliminary H1 measurements at 920 GeV proton beam energy, by the recently published H1 data at 820 GeV, by the ZEUS Backward Pipe Detector (BPT) and by the muon-proton scattering experiments NMC and BCDMS. The lines of constant y correspond to this analysis, i.e. $E_e = 27.6$ GeV and $E_p = 920$ GeV.

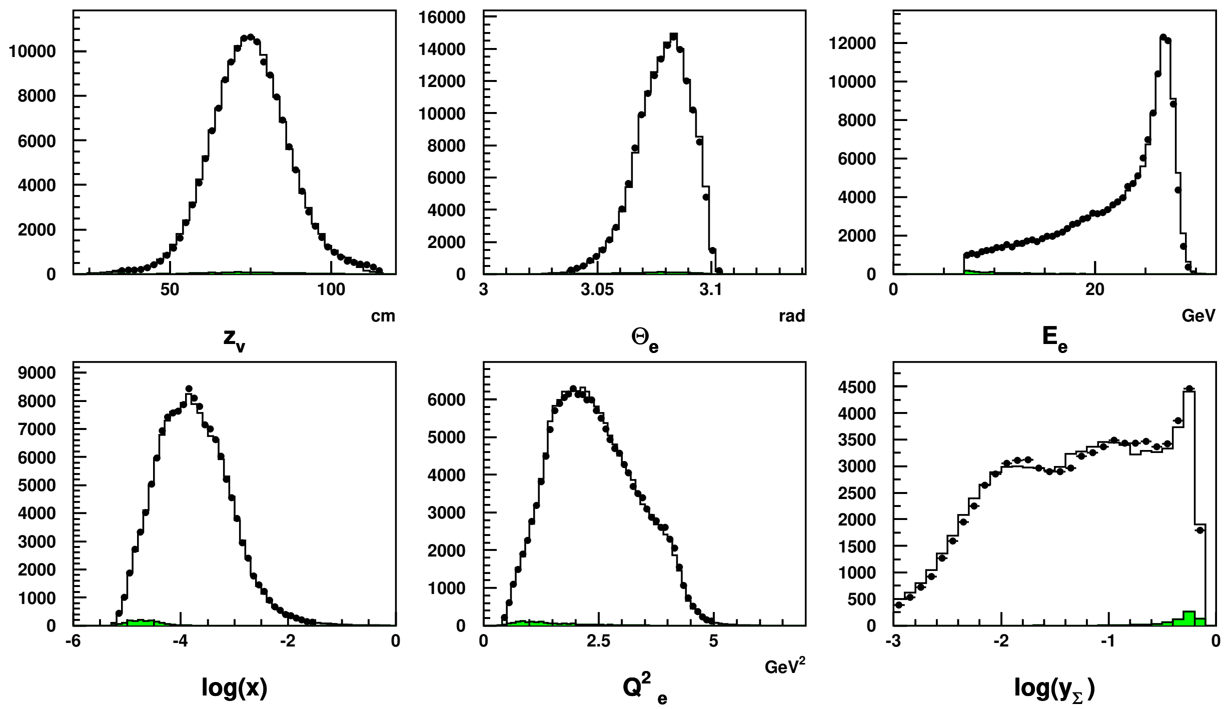

Figure 2: Event distributions of: z vertex position and polar angle reconstructed with the BST; energy of the scattered positron candidate measured in the SPACAL backward calorimeter; Bjorken-x and Q^2 from the positron kinematics and inelasticity from the Σ method. Histograms: DIS and photoproduction background (green) simulation normalised to the measured luminosity.

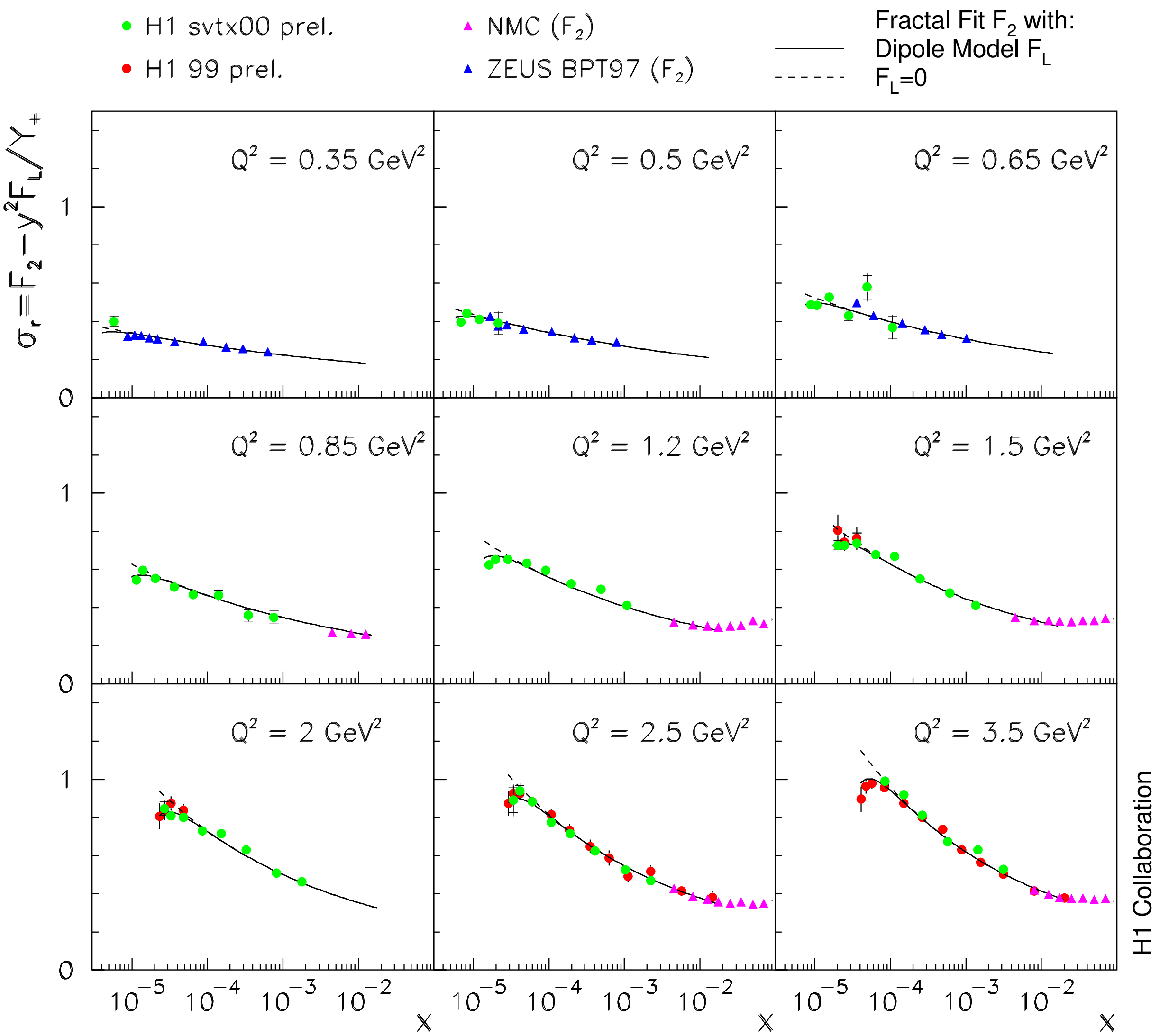

Figure 3: Measurements of the inclusive DIS cross section - H1 shifted vertex data 2000, this analysis (green points), and H199 nominal vertex data (red points), compared to larger x data from ZEUS (BPT97 blue triangles) and from NMC (purple triangles). The curves are a phenomenological parameterisation of the cross section calculating F_2 within the fractal proton structure concept and using a dipole model prediction for F_L (solid) and $F_L = 0$ (dashed).

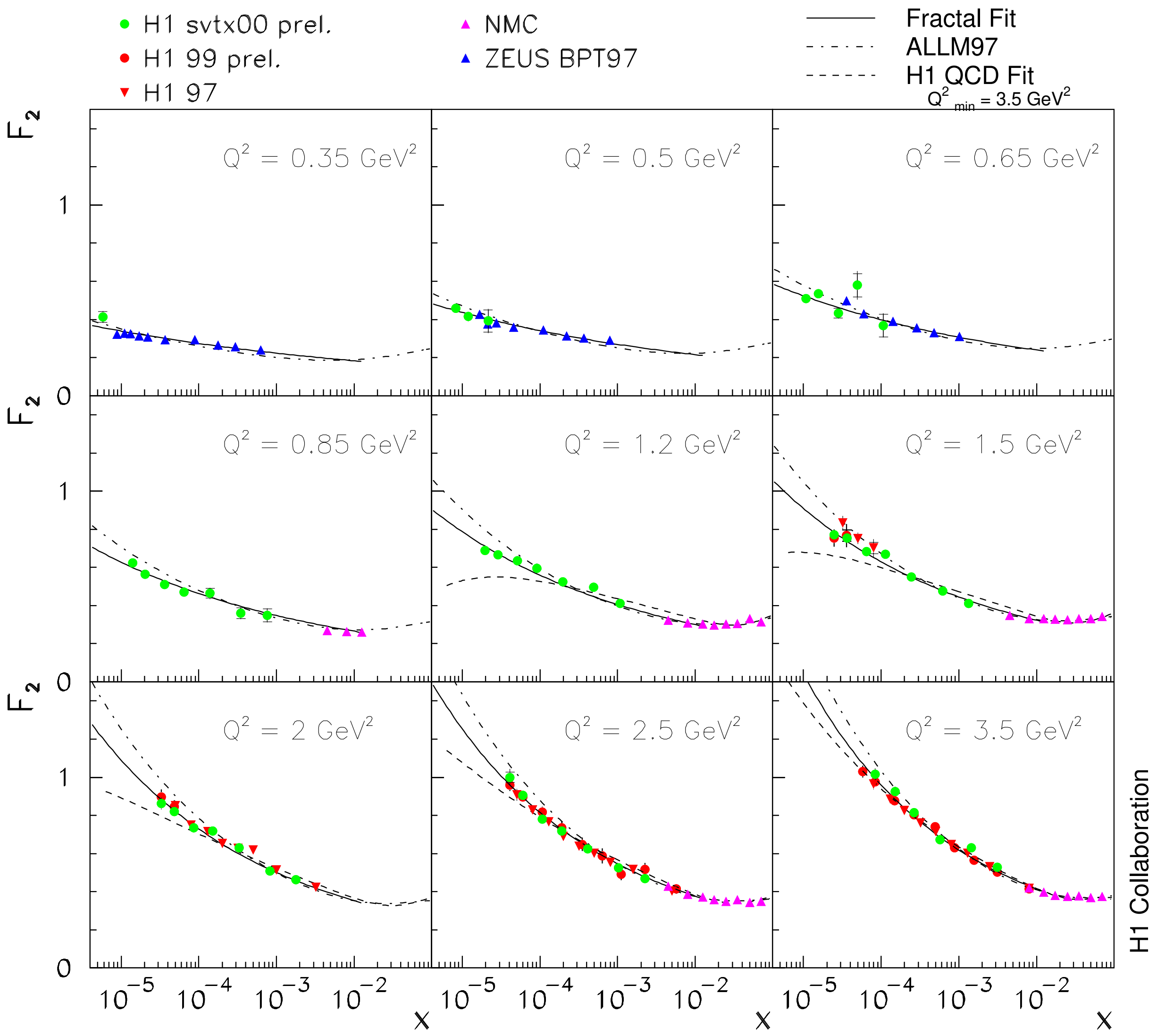

Figure 4: Measurements of the structure function $F_2(x, Q^2)$ - H1 shifted vertex data 2000, this analysis (green points), and H199 nominal vertex data (red points), compared to larger x data from ZEUS (BPT97 blue triangles) and from NMC (purple triangles). Solid curves: phenomenological parameterisation of $F_2(x, Q^2)$ based on the fractal proton structure concept; Dashed curves: NLO QCD fit to the H1 96/97 data which was performed to data for $Q^2 \geq 3.5$ GeV^2, i.e. it is extrapolated here into the lower Q^2 region. Dashed-dotted curves: ALLM97.

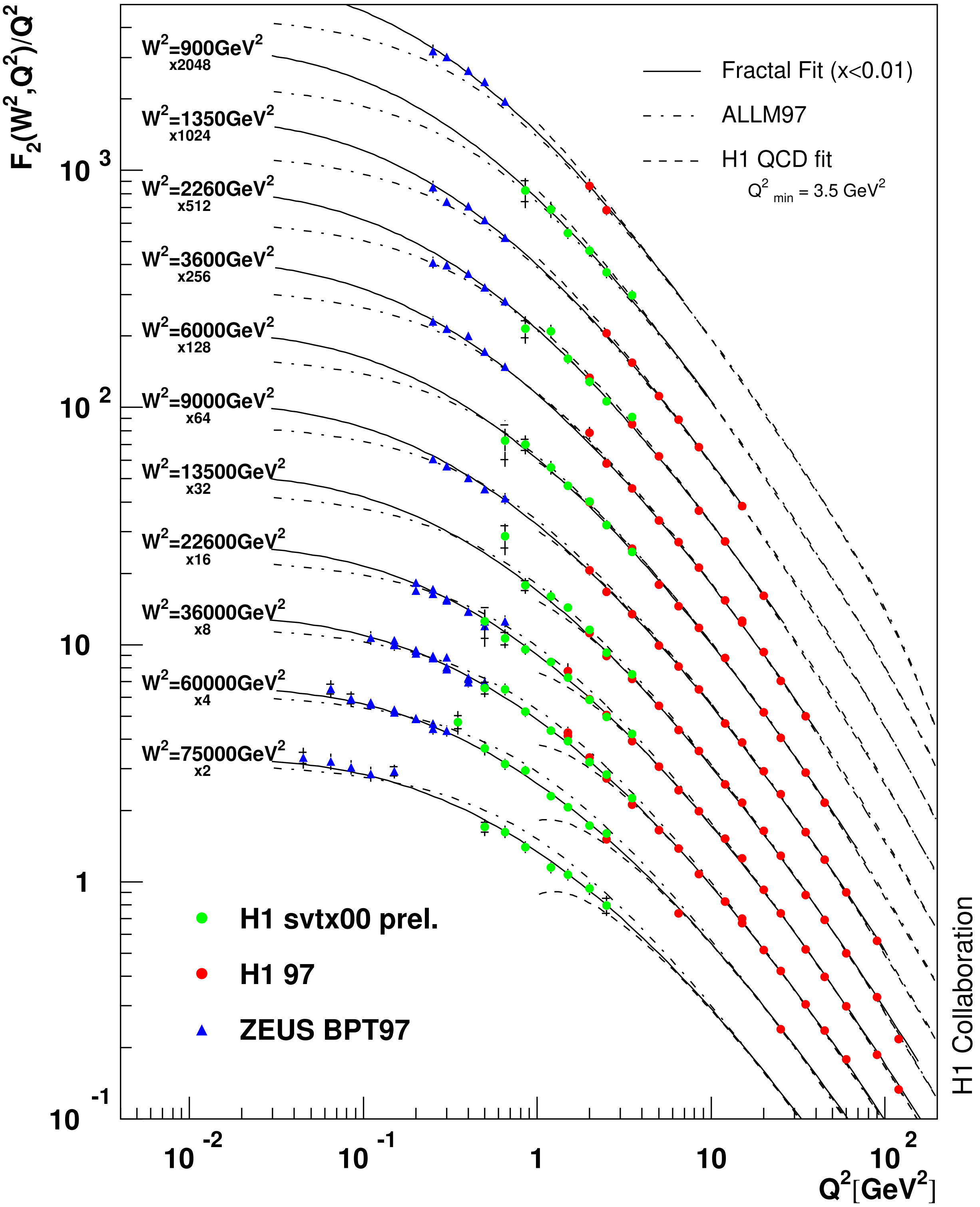

Figure 5: Measurements of the structure function F_2 represented as F_2/Q^2 which is proportional to the total cross section for virtual photon-proton scattering. Green points: H1 2000 shifted vertex data, this analysis. The solid curves represent the fractal F_2 fit which was fixed using the two data sets shown at lower Q^2 (ZEUS 97 BPT, blue triangles) and higher Q^2 (H1 96/97, red points). Dashed-dotted curves: the ALLM97 parameterisation; Dashed curves: H1 NLO QCD fit, with $Q^2_{min} = 3.5$ GeV^2, extrapolated down to 1 GeV^2.

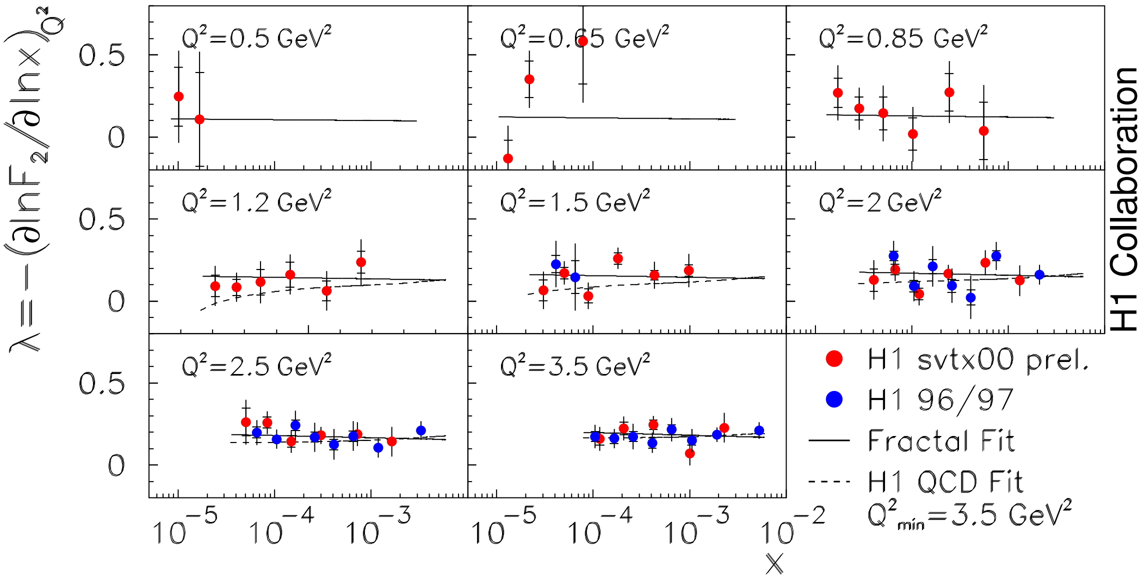

Figure 6: Measurement of the derivative function $\lambda(x, Q^2)$ with the present shifted vertex data (blue) and the nominal vertex data [16] (red): the inner error bars represent the statistical uncertainty; the full error bars include the systematic uncertainty added in quadrature; the solid curves represent the fractal fit to the ZEUS BPT and published H1 data [4]; the dashed curves represent the extrapolation of the H1 NLO QCD fit [4] below the minimum Q^2 of 3.5 GeV^2.

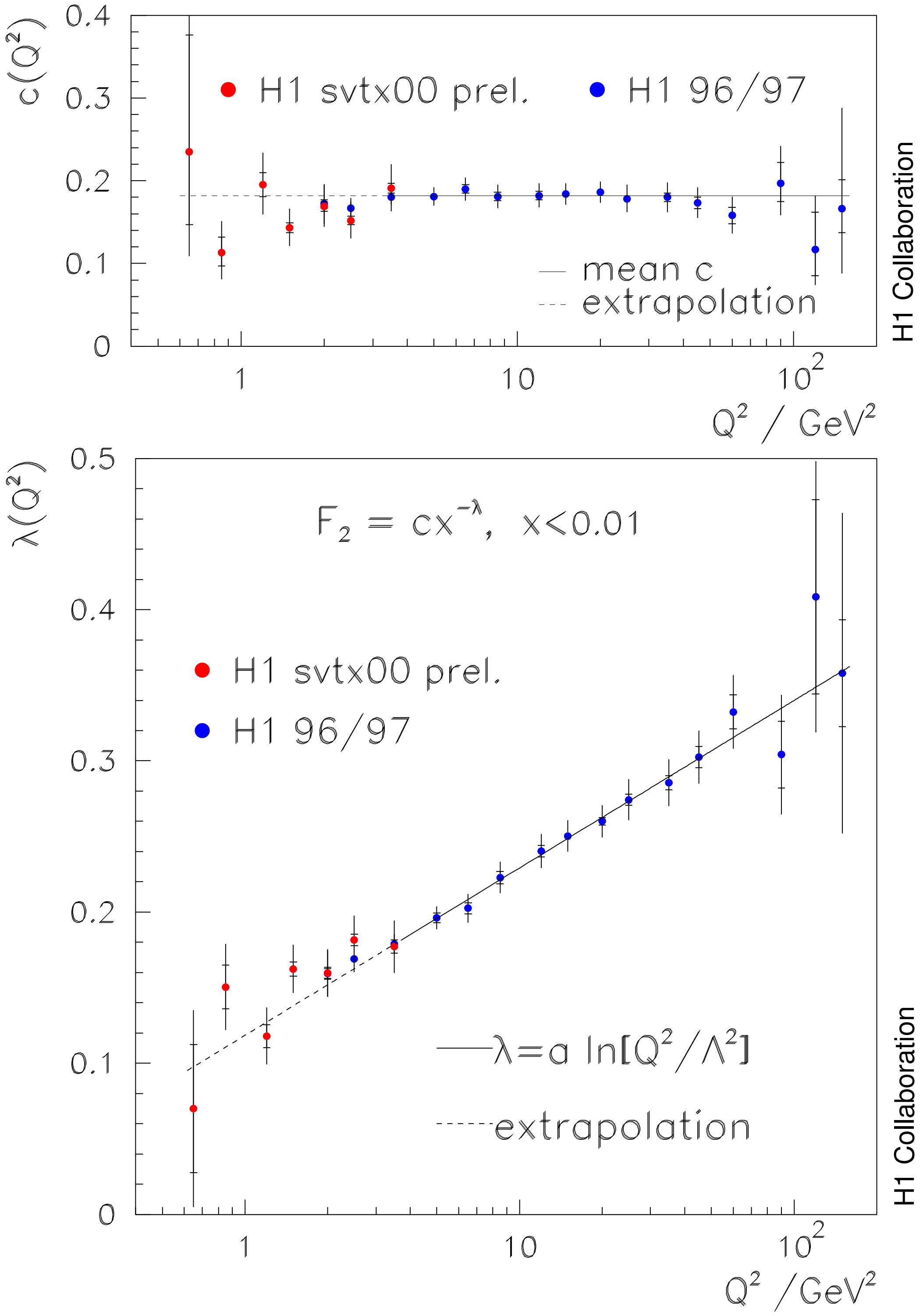

Figure 7: Determination of the coefficients $c(Q^2)$ (upper plot) and of the exponents $\lambda(Q^2)$(lower plot) from fits of the form $F_2(x, Q^2) = c(Q^2)x^{-\lambda(Q^2)}$: blue - to previous H1 structure function data [4] for $x \leq 0.01$; red - to the present data; the inner error bars illustrate the statistical uncertainties, the full error bars represent the statistical and systematic uncertainties added in quadrature. The straight lines represent the mean coefficient c (upper plot) and a fit of the form $a \ln[Q^2/\Lambda^2]$ (lower plot), respectively, using data for $Q^2 \geq 3.5$ GeV^2.

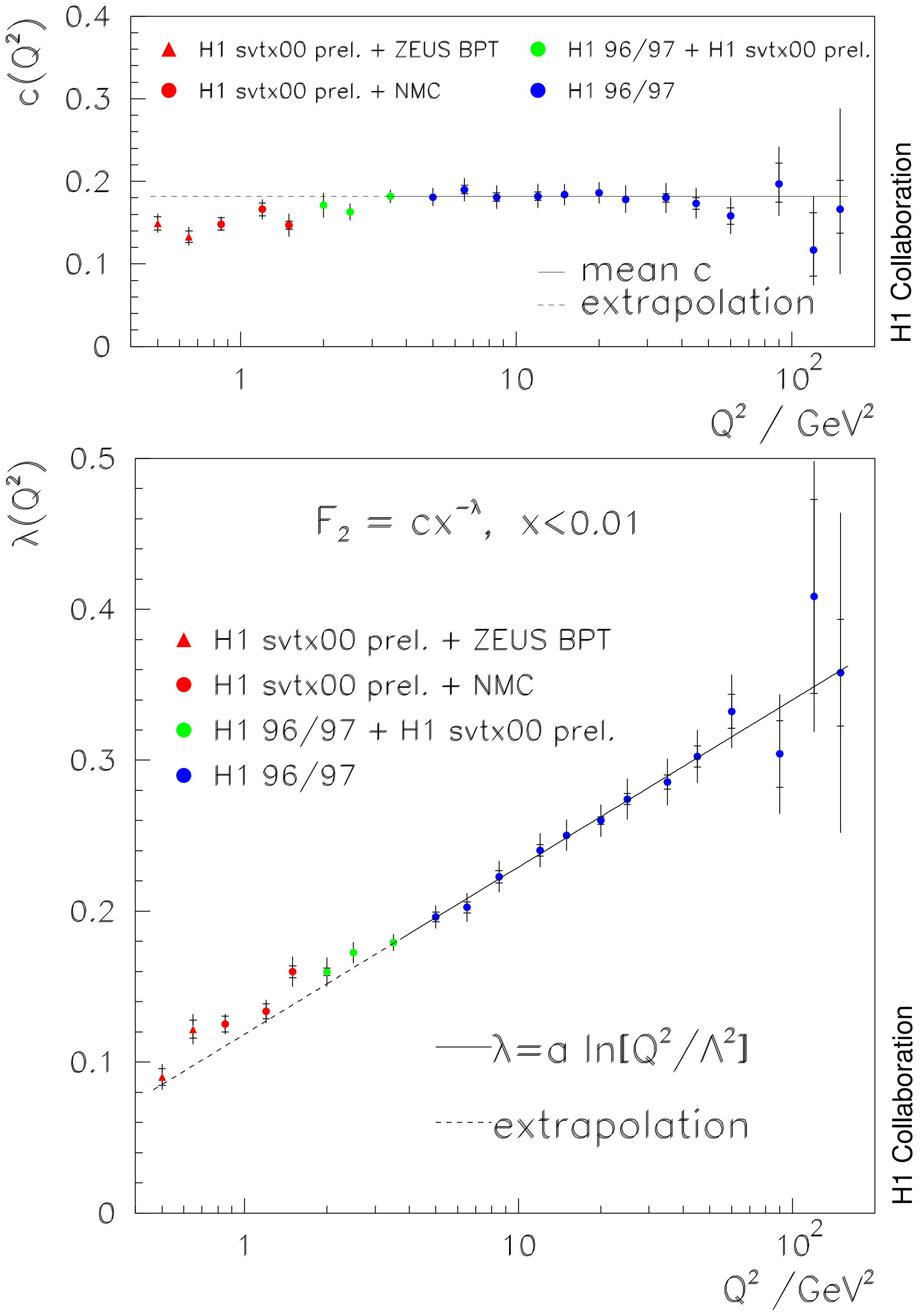

Figure 8: Determination of the coefficients $c(Q^2)$ (upper plot) and of the exponents $\lambda(Q^2)$(lower plot) from fits of the form $F_2(x, Q^2) = c(Q^2)x^{-\lambda(Q^2)}$ for $x \leq 0.01$: blue points - fits to previous H1 F_2 data [4]; green points - to the present data combined with the H1 data [4]; red points - to the present data combined with NMC data; red triangles - to the present data combined with low Q^2 ZEUS BPT data [13]; the inner error bars illustrate the statistical uncertainties, the full error bars represent the statistical and systematic uncertainties added in quadrature. The straight lines represent the mean coefficient c (upper plot) and a fit of the form $a \ln[Q^2/\Lambda^2]$ (lower plot), respectively, using data for $Q^2 \geq 3.5$ GeV^2.