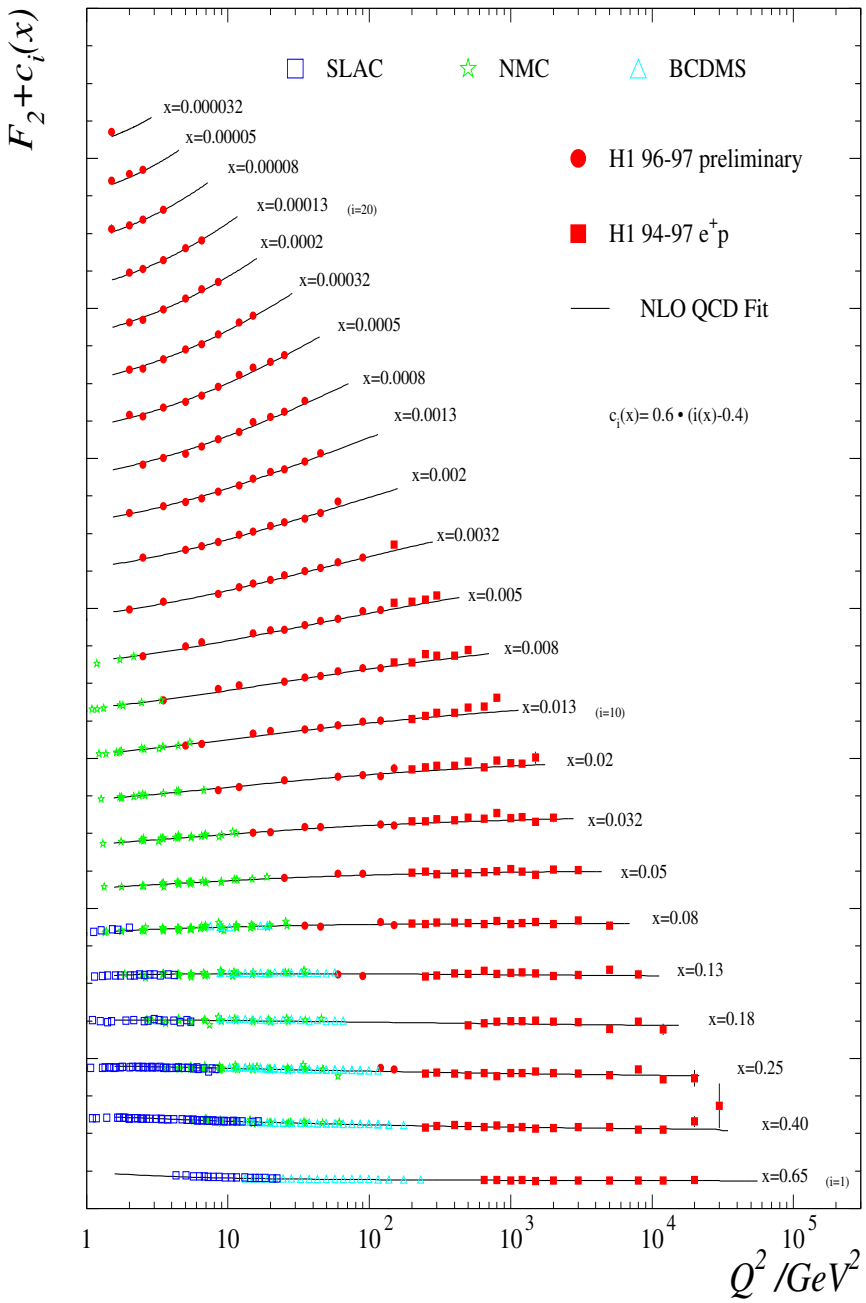
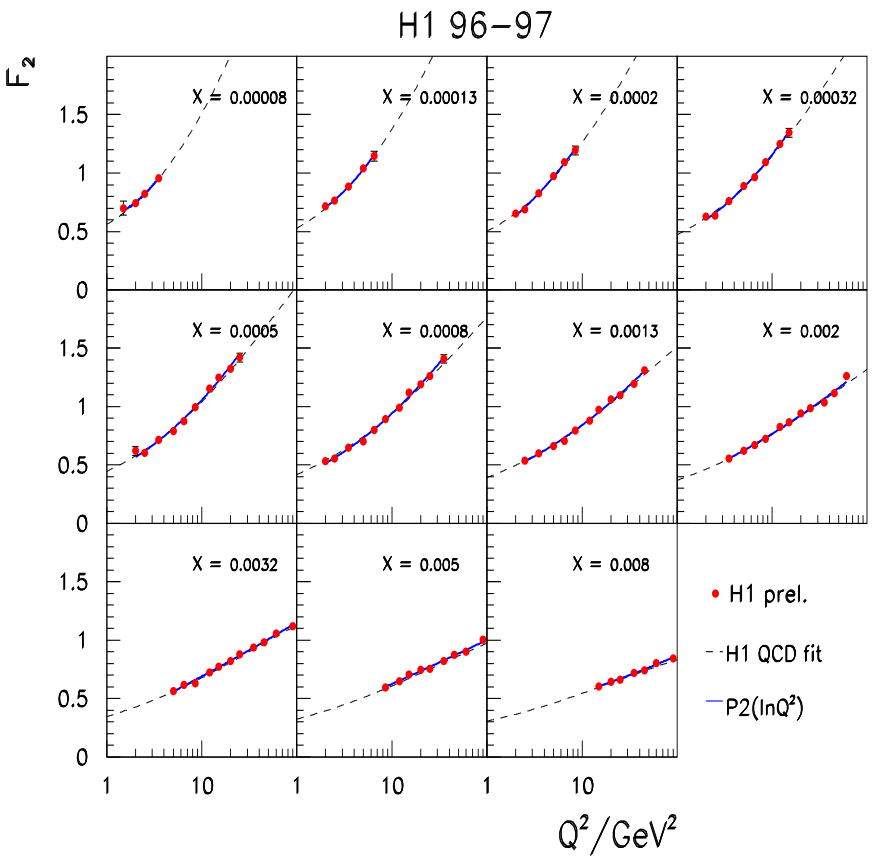
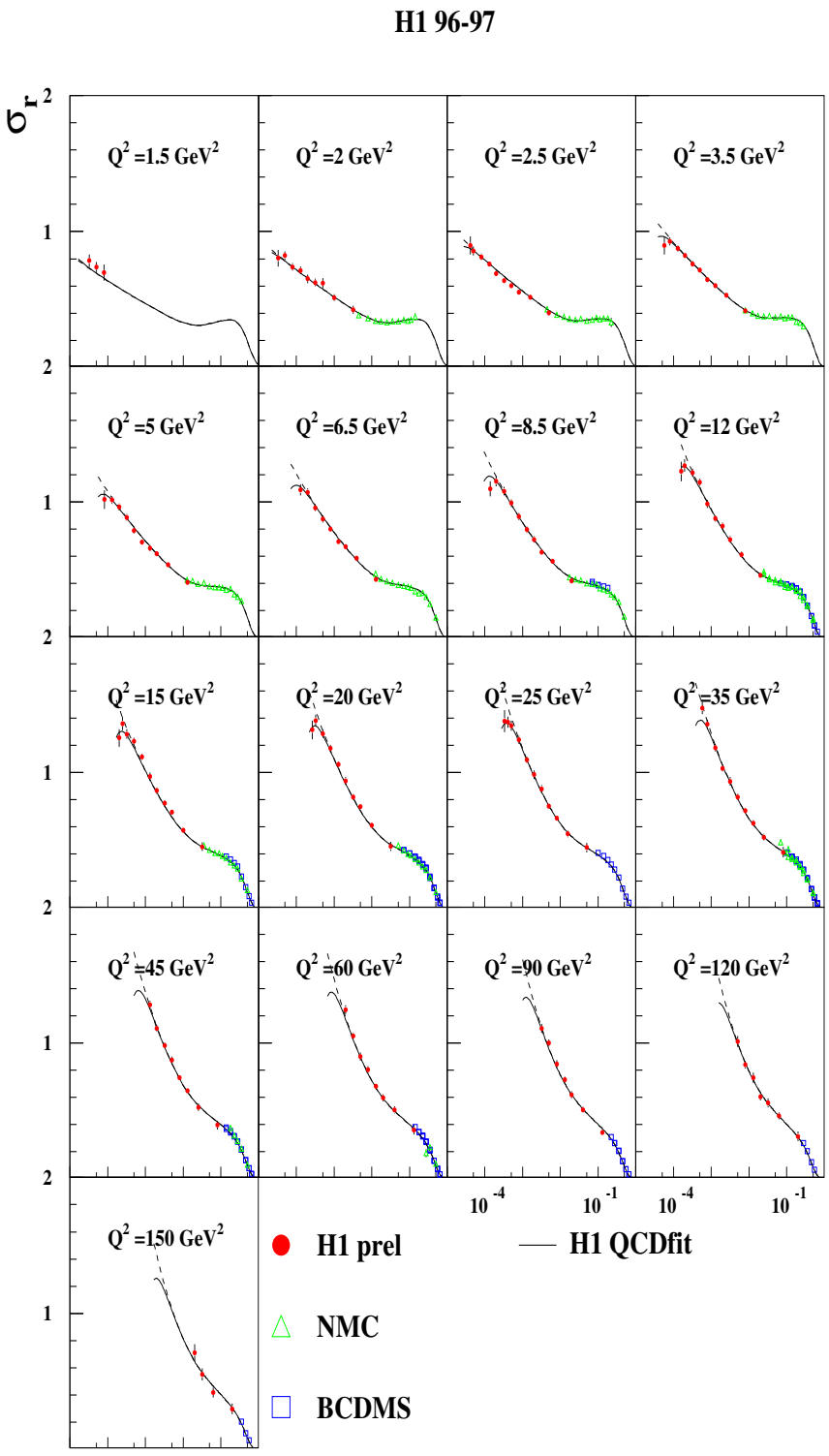
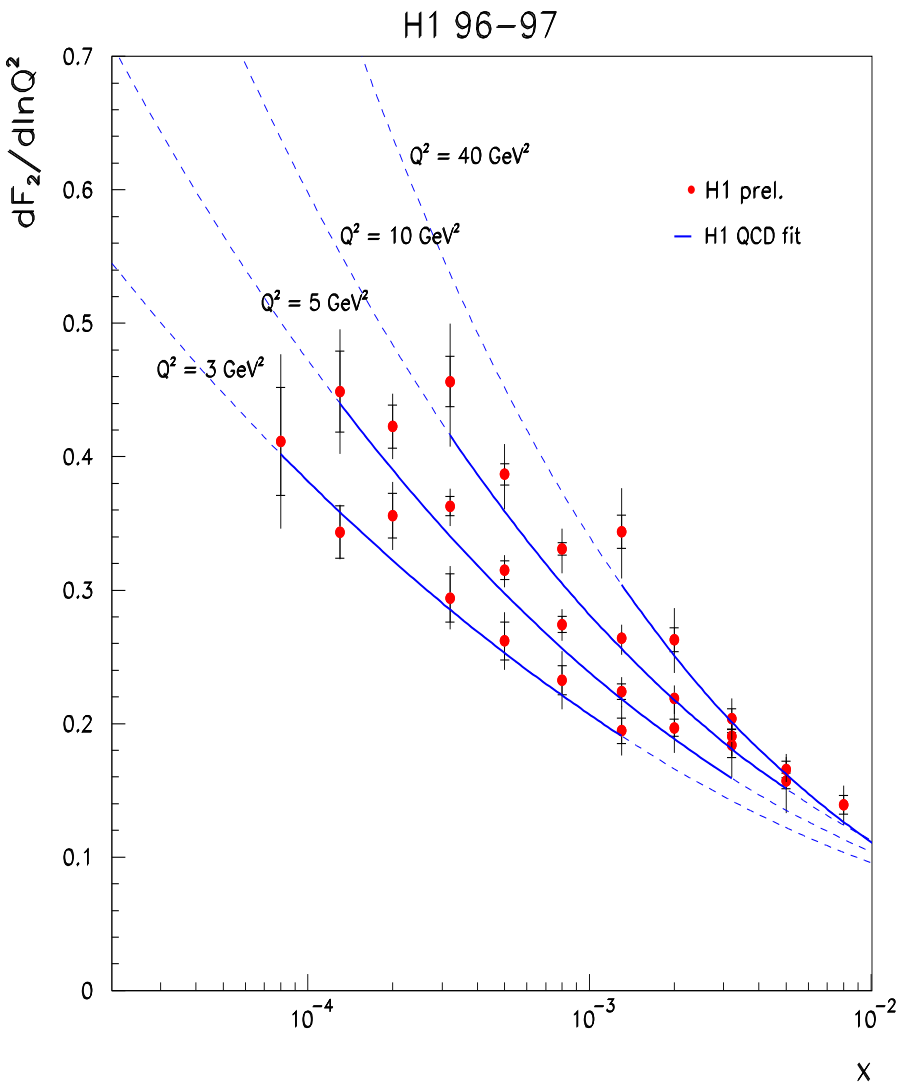
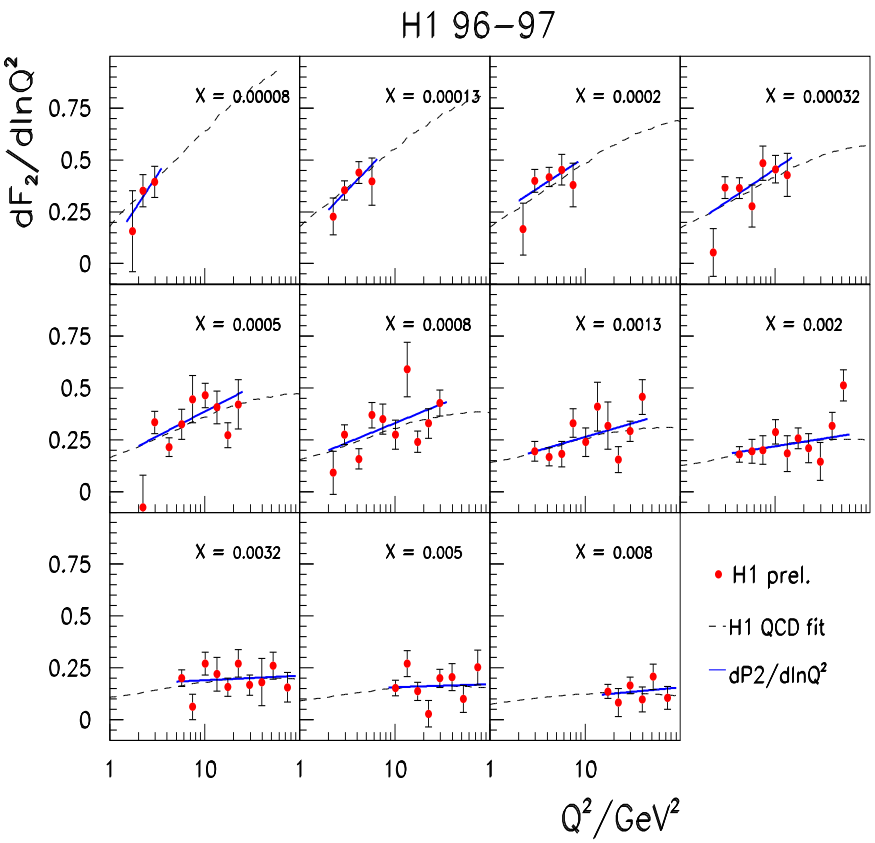
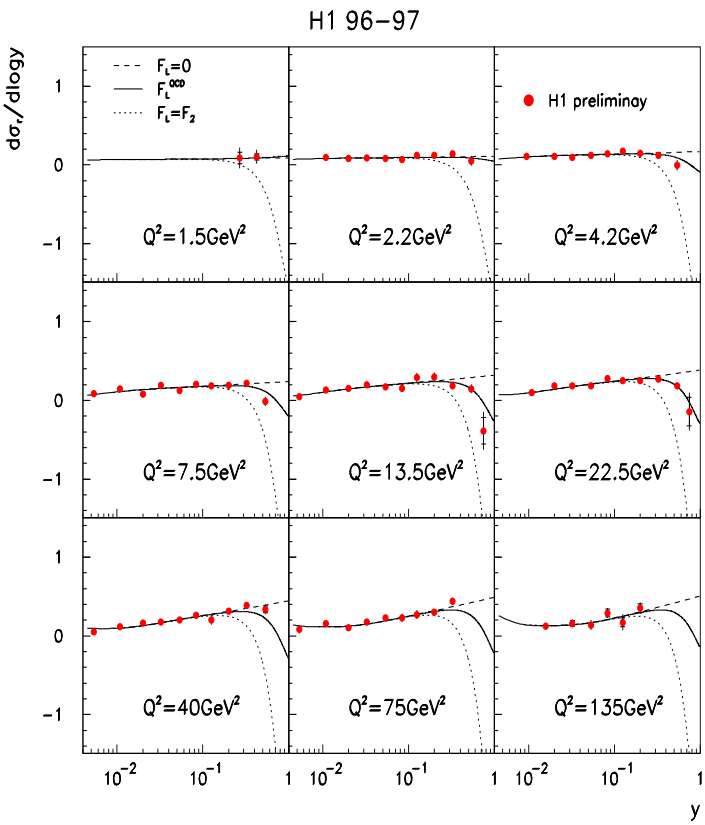

$F_2 + c_i(x)$
SLAC
NMC
BCDMS
H1 96-97 preliminary
H1 94-97 $e^+p$
NLO QCD Fit
$c_i(x) = 0.6 \cdot (i(x)-0.4)$
x=0.000032
x=0.00005
x=0.00008
x=0.00013 (i=20)
x=0.0002
x=0.00032
x=0.0005
x=0.0008
x=0.0013
x=0.002
x=0.0032
x=0.005
x=0.008
x=0.013 (i=10)
x=0.02
x=0.032
x=0.05
x=0.08
x=0.13
x=0.18
x=0.25
x=0.40
x=0.65 (i=1)
1
10
$10^2$
$10^3$
$10^4$
$10^5$
$Q^2$ /GeV$^2$

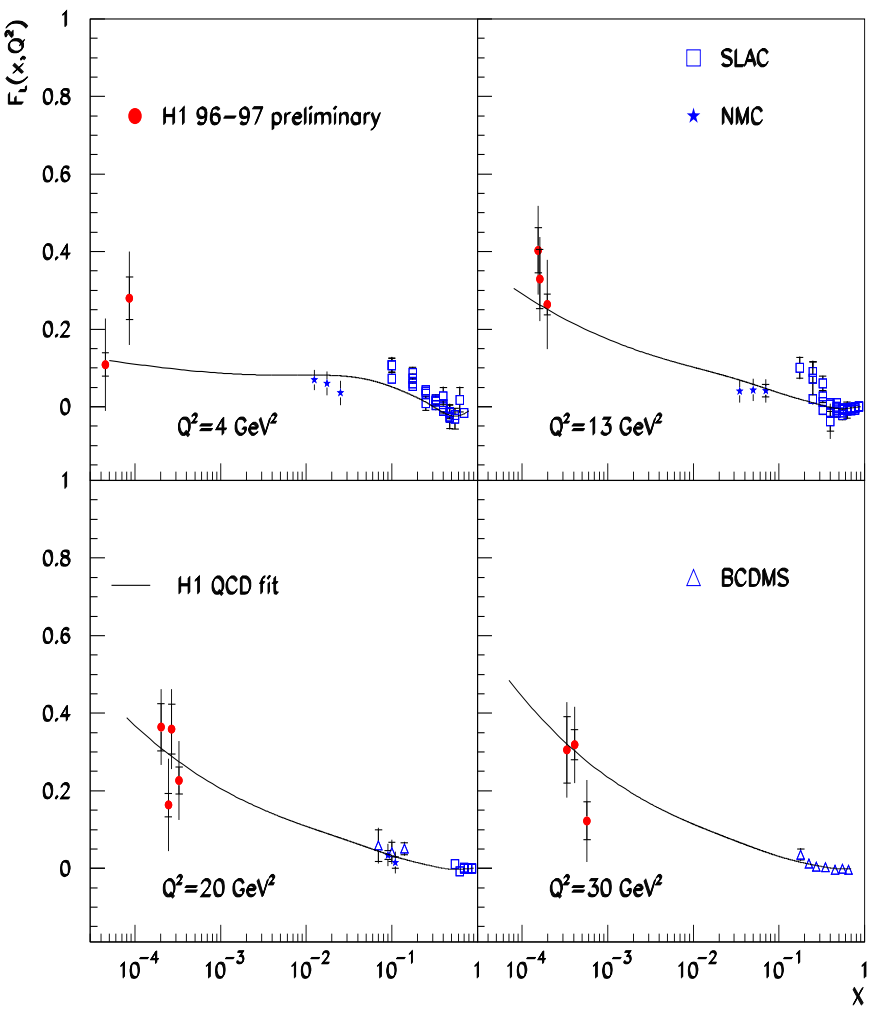

H1 96–97
$F_2$
X = 0.00008
X = 0.00013
X = 0.0002
X = 0.00032
X = 0.0005
X = 0.0008
X = 0.0013
X = 0.002
X = 0.0032
X = 0.005
X = 0.008
H1 prel.
H1 QCD fit
P2(lnQ²)
$Q^2/GeV^2$

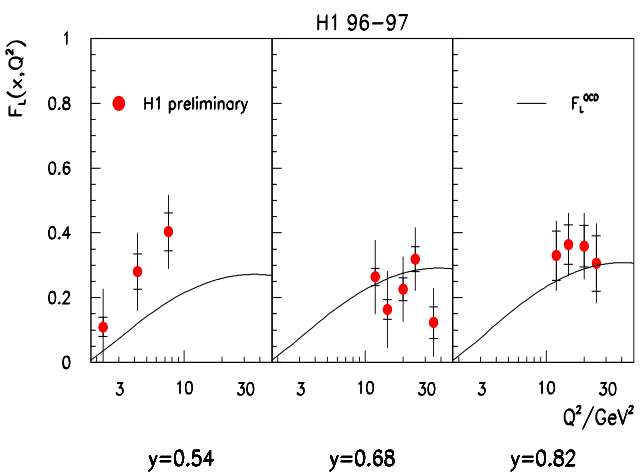

H1 96-97
$\sigma_r$
$Q^2$ =1.5 GeV$^2$
$Q^2$ =2 GeV$^2$
$Q^2$ =2.5 GeV$^2$
$Q^2$ =3.5 GeV$^2$
$Q^2$ =5 GeV$^2$
$Q^2$ =6.5 GeV$^2$
$Q^2$ =8.5 GeV$^2$
$Q^2$ =12 GeV$^2$
$Q^2$ =15 GeV$^2$
$Q^2$ =20 GeV$^2$
$Q^2$ =25 GeV$^2$
$Q^2$ =35 GeV$^2$
$Q^2$ =45 GeV$^2$
$Q^2$ =60 GeV$^2$
$Q^2$ =90 GeV$^2$
$Q^2$ =120 GeV$^2$
$Q^2$ =150 GeV$^2$
2
1
$10^{-4}$
$10^{-1}$
H1 prel
H1 QCDfit
NMC
BCDMS
X

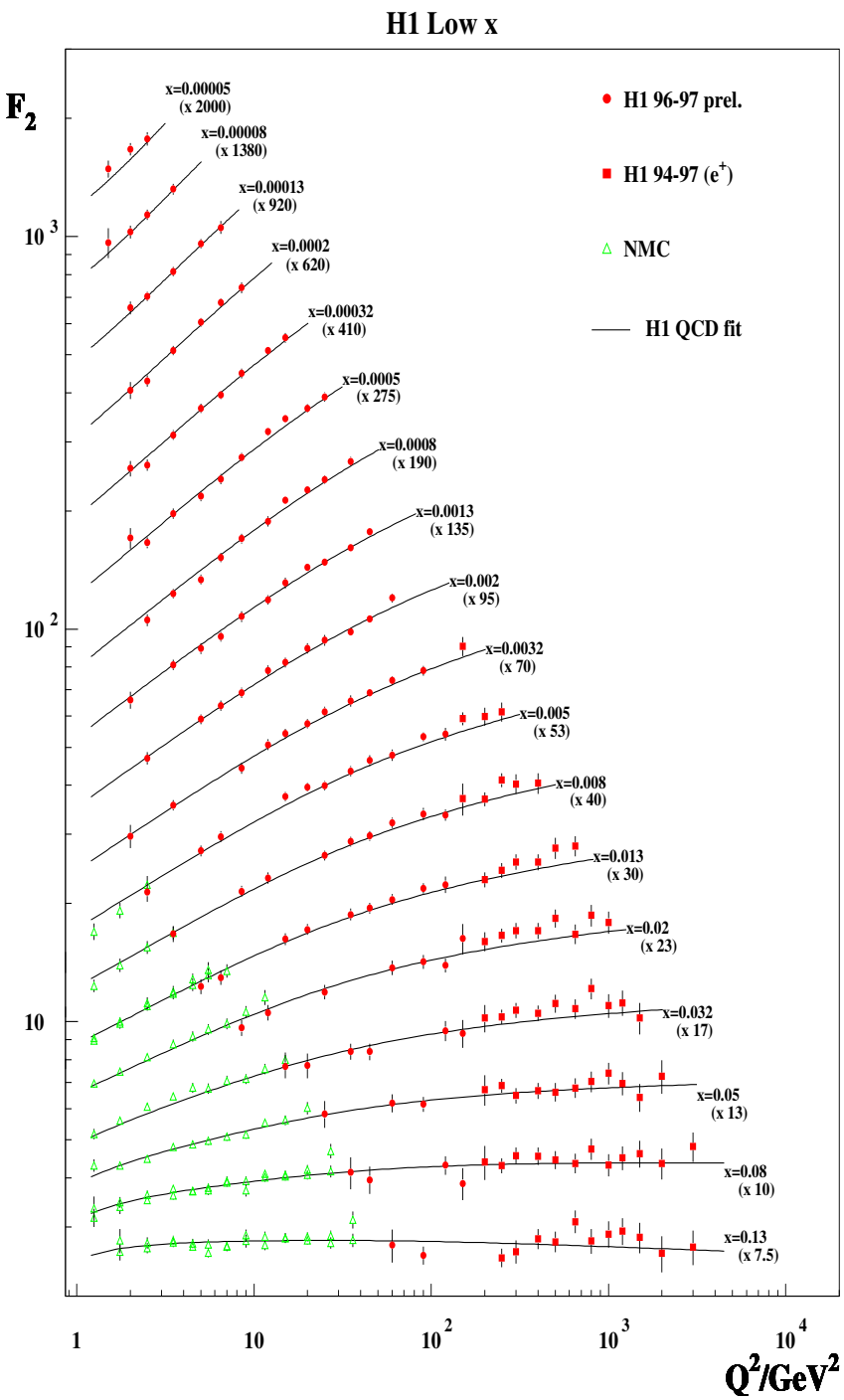

H1 96–97
$dF_2/d\ln Q^2$
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
$Q^2$ = 40 GeV$^2$
$Q^2$ = 10 GeV$^2$
$Q^2$ = 5 GeV$^2$
$Q^2$ = 3 GeV$^2$
H1 prel.
H1 QCD fit
$10^{-4}$
$10^{-3}$
$10^{-2}$
x

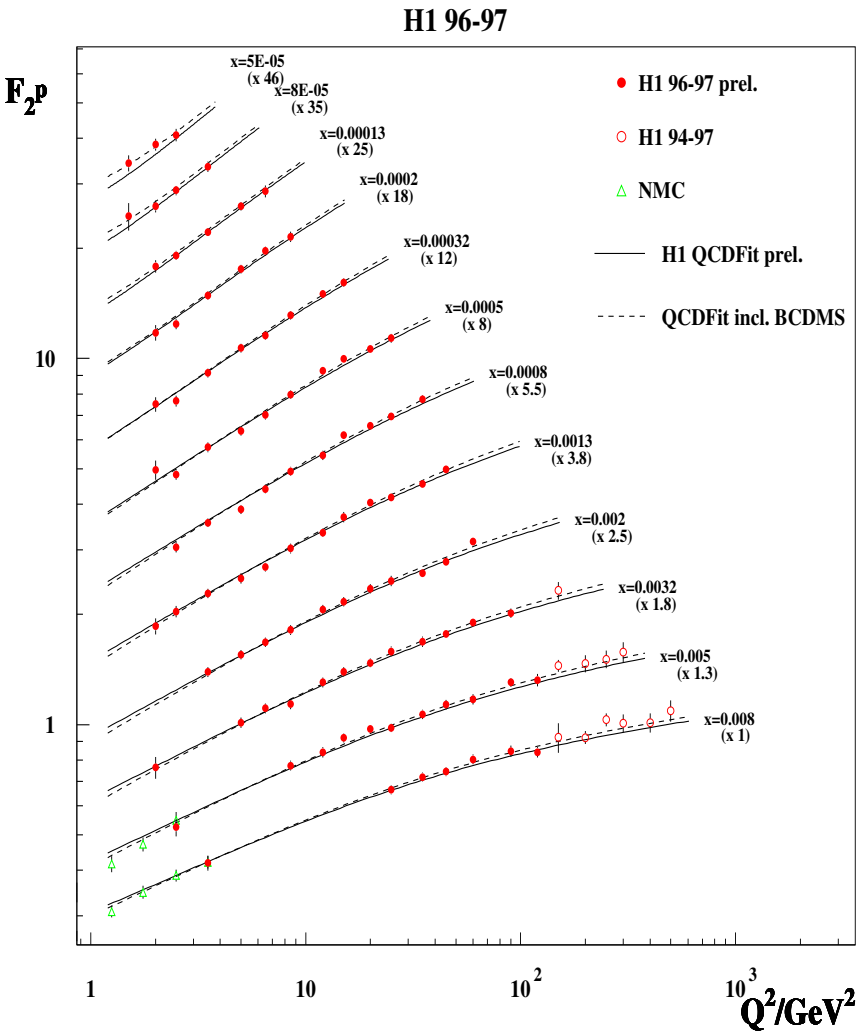

H1 96–97
dF2/dlnQ2
X = 0.00008
X = 0.00013
X = 0.0002
X = 0.00032
X = 0.0005
X = 0.0008
X = 0.0013
X = 0.002
X = 0.0032
X = 0.005
X = 0.008
0.75
0.5
0.25
0
1
10
Q2/GeV2
H1 prel.
H1 QCD fit
dP2/dlnQ2

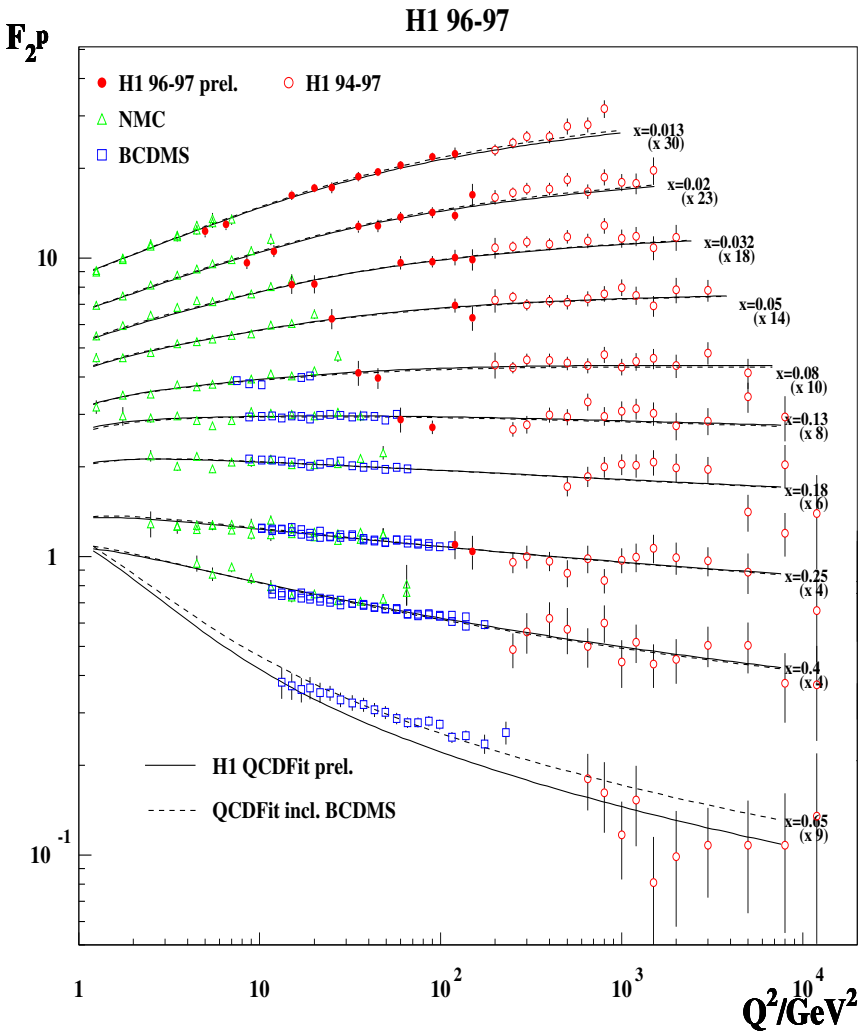

H1 96–97
$d\sigma_r/d\log y$
$F_L=0$
$F_L^{QCD}$
$F_L=F_2$
H1 preliminay
$Q^2$=1.5GeV$^2$
$Q^2$=2.2GeV$^2$
$Q^2$=4.2GeV$^2$
$Q^2$=7.5GeV$^2$
$Q^2$=13.5GeV$^2$
$Q^2$=22.5GeV$^2$
$Q^2$=40GeV$^2$
$Q^2$=75GeV$^2$
$Q^2$=135GeV$^2$
1
0
−1
$10^{-2}$
$10^{-1}$
y

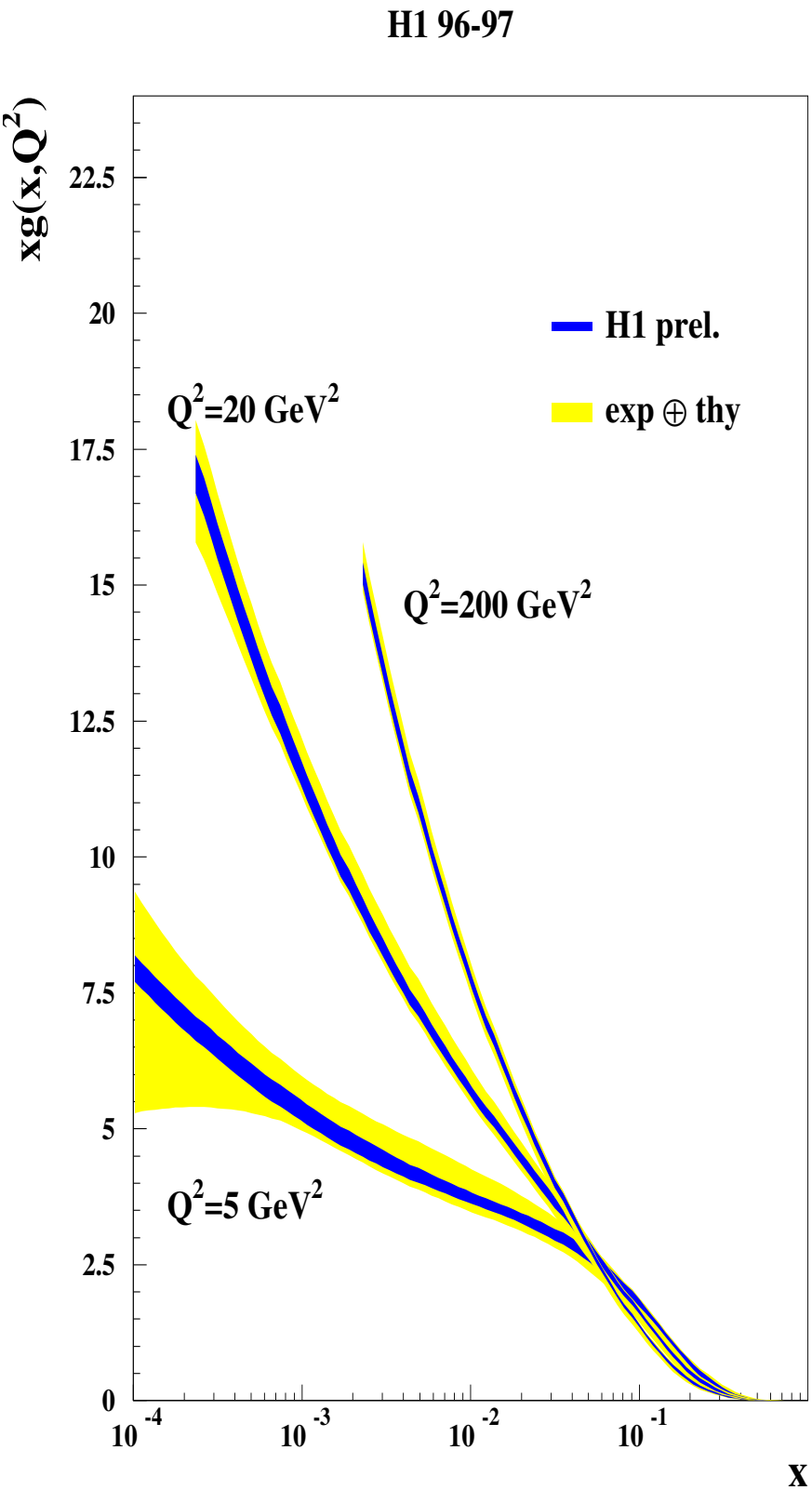

$F_L(x,Q^2)$
H1 96–97 preliminary
H1 QCD fit
SLAC
NMC
BCDMS
$Q^2$=4 GeV$^2$
$Q^2$=13 GeV$^2$
$Q^2$=20 GeV$^2$
$Q^2$=30 GeV$^2$
X


H1 96-97
$F_L(x,Q^2)$
H1 preliminary
$F_L^{QCD}$
1
0.8
0.6
0.4
0.2
0
3
10
30
$Q^2/GeV^2$
y=0.54
y=0.68
y=0.82


H1 Low x
F2
H1 96-97 prel.
H1 94-97 (e+)
NMC
H1 QCD fit
x=0.00005 (x 2000)
x=0.00008 (x 1380)
x=0.00013 (x 920)
x=0.0002 (x 620)
x=0.00032 (x 410)
x=0.0005 (x 275)
x=0.0008 (x 190)
x=0.0013 (x 135)
x=0.002 (x 95)
x=0.0032 (x 70)
x=0.005 (x 53)
x=0.008 (x 40)
x=0.013 (x 30)
x=0.02 (x 23)
x=0.032 (x 17)
x=0.05 (x 13)
x=0.08 (x 10)
x=0.13 (x 7.5)
10 3
10 2
10
1
10
10 2
10 3
10 4
Q2/GeV2


H1 96-97
$F_2^p$
x=5E-05
(x 46)
x=8E-05
(x 35)
x=0.00013
(x 25)
x=0.0002
(x 18)
x=0.00032
(x 12)
x=0.0005
(x 8)
x=0.0008
(x 5.5)
x=0.0013
(x 3.8)
x=0.002
(x 2.5)
x=0.0032
(x 1.8)
x=0.005
(x 1.3)
x=0.008
(x 1)
H1 96-97 prel.
H1 94-97
NMC
H1 QCDFit prel.
QCDFit incl. BCDMS
10
1
1
10
$10^2$
$10^3$
$Q^2/GeV^2$


H1 96-97
$F_2^p$
H1 96-97 prel.
H1 94-97
NMC
BCDMS
x=0.013 (x 30)
x=0.02 (x 23)
x=0.032 (x 18)
x=0.05 (x 14)
x=0.08 (x 10)
x=0.13 (x 8)
x=0.18 (x 6)
x=0.25 (x 4)
x=0.4 (x 2)
x=0.65 (x 1)
H1 QCDFit prel.
QCDFit incl. BCDMS
10
1
$10^{-1}$
1
10
$10^2$
$10^3$
$10^4$
$Q^2/GeV^2$


H1 96-97
xg(x,Q²)
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
H1 prel.
exp ⊕ thy
Q²=20 GeV²
Q²=200 GeV²
Q²=5 GeV²
10⁻⁴
10⁻³
10⁻²
10⁻¹
x