~~POLYNOMIALS for PDFs~~

fuv (u_v) (6 pars)

1: $N x^a (1-x)^b e^{cx} (1+e^d x)^e$ ← $C_6(x)$ — CTEQ6.1 ?

2: $N x^a (1-x)^b (1 + cx + dx^2)$ — $P_0(x)$

3-7: $N x^a (1-x)^b (1 + c\sqrt{x} + dx + e x\sqrt{x})$ — $P(\sqrt{x})$

8-11: $N x^a (1-x)^b (1 + c\sqrt{x} + dx)$ — $P_0(\sqrt{x})$ reduced params

fdv (d_v) (6 pars)

1: $N x^a (1-x)^b C_6(x)$ — CTEQ 6.1

2: $N x^a (1-x)^b P_0(\sqrt{x})$ — $P(x)$

3-7: $N[x^a(1-x^b) P(\sqrt{x}) + \gamma x^a u_v(x)]$ — $P(\sqrt{x})$ - extended

$d/u \xrightarrow[x\to 1]{} \gamma N$

8-11: as above, w/o P_0 — extended, reduced params

fubpd ($\bar{u}+\bar{d}$) (6 pars)

1: $N x^a (1-x)^b C_6(x)$

2: $N x^a (1-x)^b P_0(x)$

>3-11: $N x^a (1-x)^b P(\sqrt{x})$

fdboub ($\bar{d}/\bar{u}$) (5 pars)

1: $N x^a (1-x)^b + (1+cx)(1-x)^d + \frac{1}{\bar{\beta}} \log(1 + e^{-\bar{\beta}(?)} - e^{-\bar{\beta}})$ ↓ ??

2-5: $\bar{d} - \bar{u}$:
- 2-3: $N x^a (1-x)^b P_0(x)$
- 4: $N x^a (1-x)^b P_0(\sqrt{x})$
- 5: $N x^a (1-x)^b e^{cx} (1+|d|x)$

} handled by fdbmub

6: $N x^a (1-x)^b + (1+cx)(1-x)^d$ if smaller than $\bar{\beta}$, otherwise 0,

7-9: $N x^a (1-x)^b + 1 + cx(1-x)^d$ — CTEQ6 CJ15 "pointed" double bump

10: $N x^a (1-x)^b + 1 + e x^f + c x^{1} (1-x)^d$ double bump, free @ $x \to 1$

11: $N x^a (1-x)^b P_0(\sqrt{x}) + 1 + e x^f$ — Single extended bump, free @ $x \to 1$

Effectively penalizes the bump

$\sum_{11}$ $\sum_{9}$

fcn fs $(\Sigma) = u_V + d_V + 2_i(\bar{u}+\bar{d}) + s+\bar{s} \equiv \sum_q (q+\bar{q})$

(5 params) $s+\bar{s}$ · 1-7 & 10-11 : $k(\bar{u}+\bar{d})$ ⇐ $s=\bar{s}=k\,\frac{\bar{u}+\bar{d}}{2}$

8 : $\underbrace{N x^a (1-x)^b P_0(\sqrt{x})}_{\equiv k(x)} (\bar{u}+\bar{d})$

9 : $2\underbrace{N x^a (1-x)^b P_0(\sqrt{x})}_{s(x)}$

fcn fg (g) 6 params

1: $N x^a (1-x)^b G_6(x)$

2: $N x^a (1-x)^b P_0(x)$

≥3: $N x^a (1-x)^c P_0(\sqrt{x})$

fcnvl (ivl) ~~ivl~~ = 3 : $u_V + 2\bar{u} - \frac{1}{4}\Sigma = u+\bar{u} - \frac{1}{4}(u+\bar{u}) + \cdots$

ivl = 4 $d_V + 2\bar{d} - \frac{1}{4}\Sigma$

$c+\bar{c} = -\frac{1}{4}\Sigma$