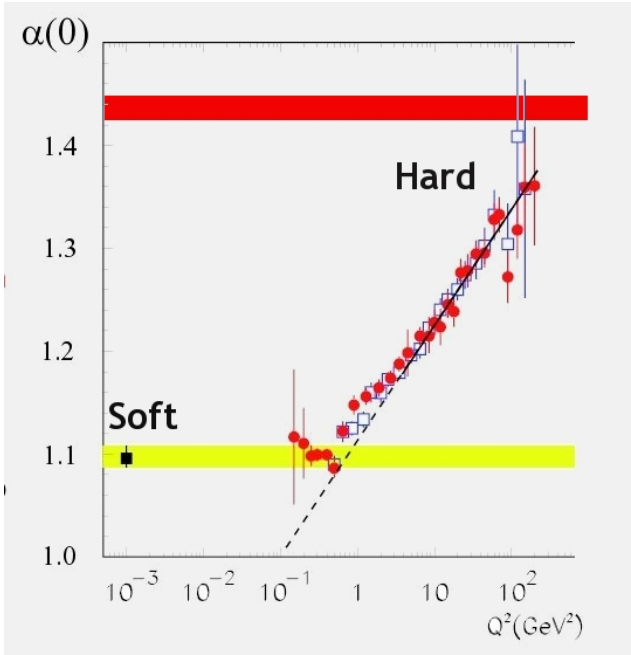
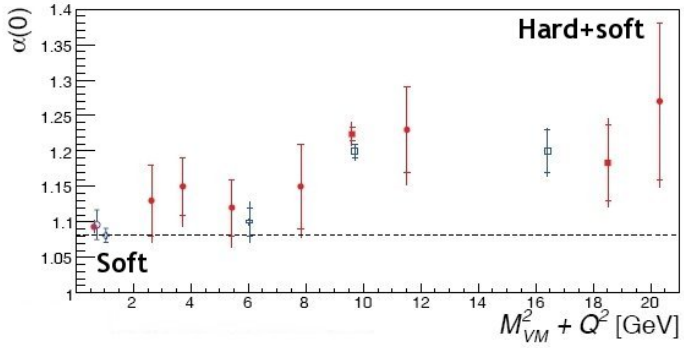
The two-pomeron picture

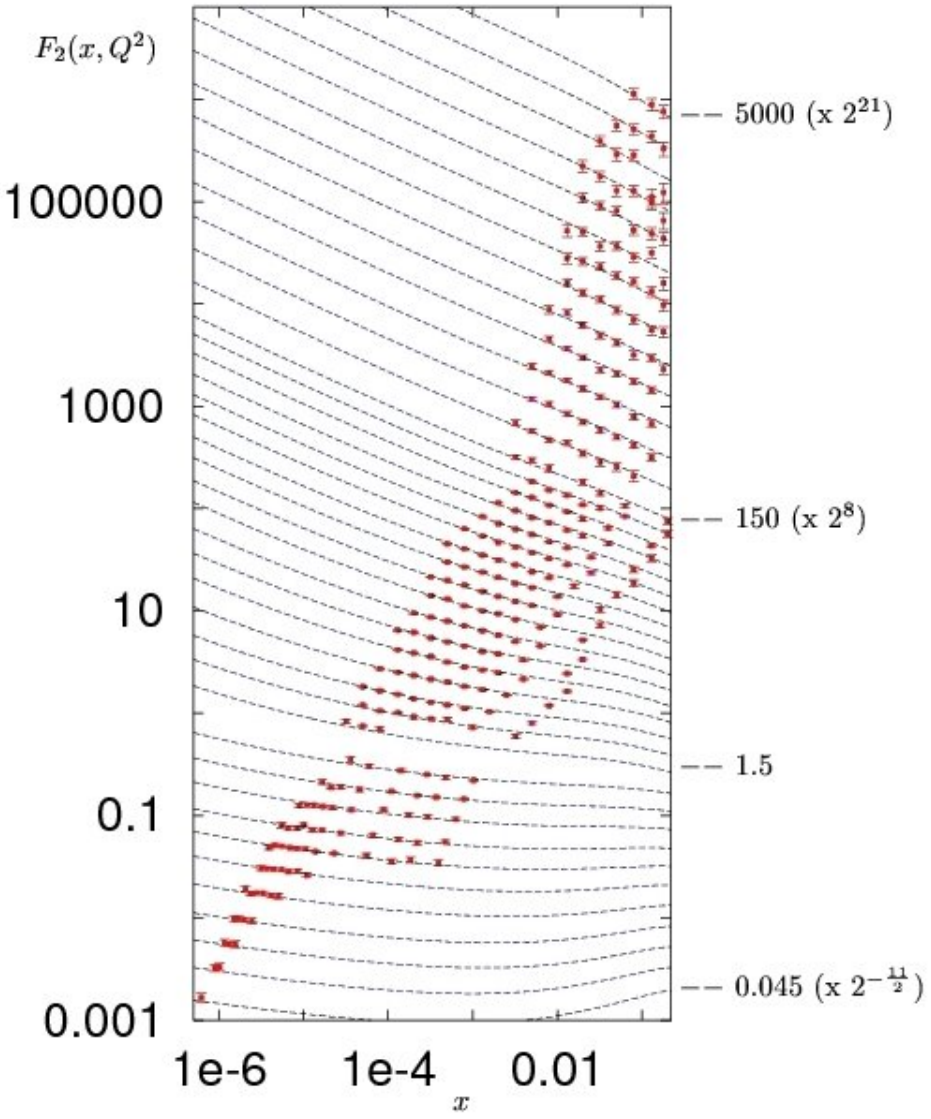


$$F_2/x \sim C_S(Q^2)s^{\alpha_S(0)} + C_H(Q^2)s^{\alpha_H(0)}$$



$$s^2 \frac{d\sigma}{dt} \sim \left(C_S(M^2, Q^2)s^{\alpha_S(t)} + C_H(M^2, Q^2)s^{\alpha_H(t)} \right)^2$$

DIS



- F_2 data well reproduced at small x;

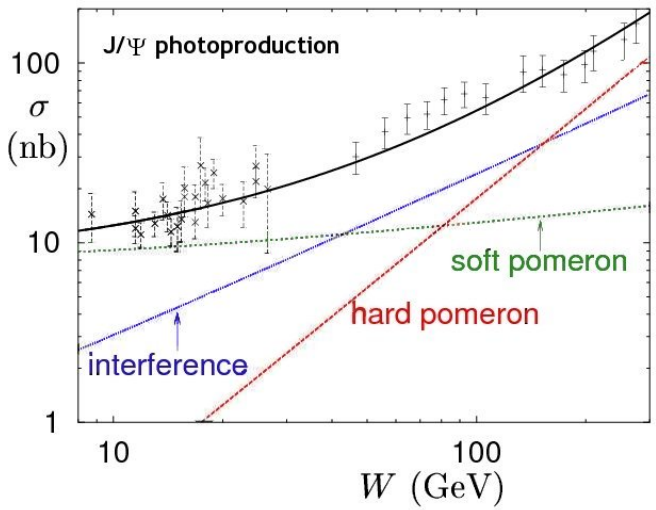
(Donnachie-Landshoff, 2001)

- Can be extended to higher x;
- Can be made compatible with DGLAP;

(Donnachie-Landshoff, 2002)

- $\alpha_H(0) = 1.4372$

Vector mesons

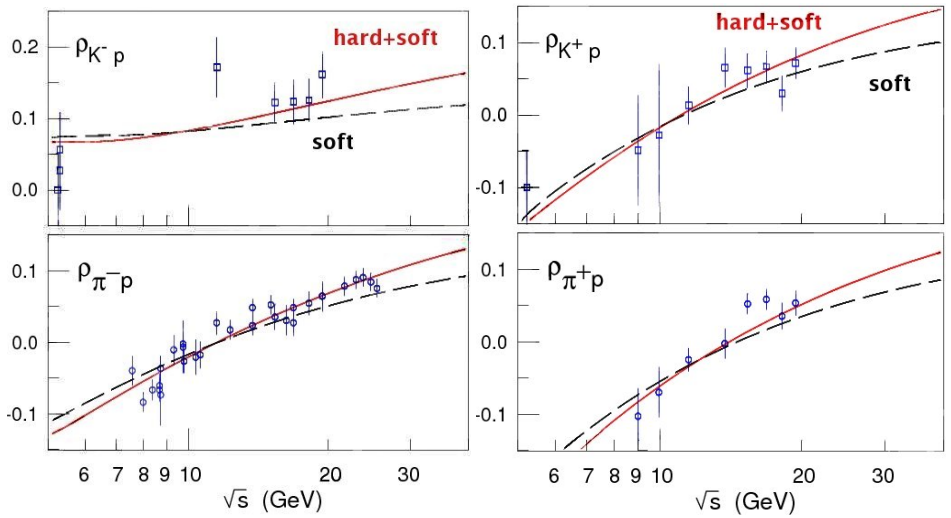


- Same intercepts.
- $\alpha_H(t) = 1.44 + 0.1t$
- $\alpha_S(t) = 1.08 + 0.25t$

(Donnachie-Landshoff, 2002)

$t = 0$: σ_{tot}, ρ

(JRC, Lengyel, Martynov, Selyugin, 2004

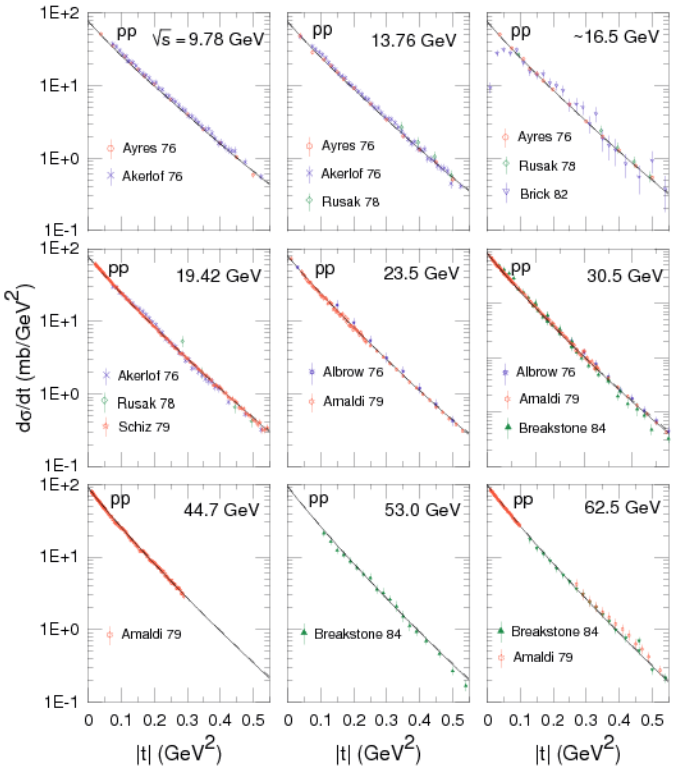


- Improves the fit by 10σ !
- The best value of the hard intercept is

$$\alpha_H(0) = 1.45 \pm 0.01$$

Elastic scattering

(JRC, Lengyel, Martynov, 2005)



- Very good fit ($\chi^2/dof = 0.95$);
- Hard pomeron: $\alpha_H(t) = 1.45 + 0.10t$: same slope as in vector meson electroproduction!
- Soft pomeron: $\alpha_S(t) = 1.07 + 0.30t$