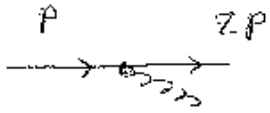
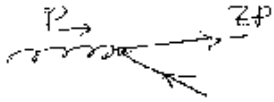
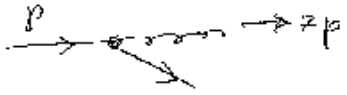
Splitting functions



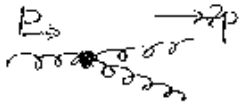
$$P_{qq}(z) = \frac{4}{3}\cdot\frac{1+z^2}{1-z}$$



$$P_{qg}(z) = \frac{1}{2}\left[z^2+(1-z)^2\right]$$



$$P_{gq}(z) = \frac{4}{3}\cdot\frac{1+(1-z)^2}{z}$$



$$P_{gg}(z) = 6\left[\frac{z}{1-z}+\frac{1-z}{z}+z(1-z)\right]$$

DGLAP-Gleichungen für $q(x,Q^2)$ und $G(x,Q^2)$:

$$Q^2\frac{\partial q(x,Q^2)}{\partial Q^2} = \frac{\alpha_s}{2\pi}\int_x^1 \frac{dy}{y}\left[P_{qq}\left(\frac{x}{y}\right)q(y,Q^2)+P_{qg}\left(\frac{x}{y}\right)G(y,Q^2)\right]$$

$$Q^2\frac{\partial G(x,Q^2)}{\partial Q^2} = \frac{\alpha_s}{2\pi}\int_x^1 \frac{dy}{y}\left[P_{gq}\left(\frac{x}{y}\right)q(y,Q^2)+P_{gg}\left(\frac{x}{y}\right)G(y,Q^2)\right]$$

$q(x,Q_0^2)$, $G(x,Q_0^2)$ —DGLAP→ $q(x,Q^2)$, $G(x,Q^2)$

exp. Input — Vorhersage

Quark- und Gluon-Verteilungsfunktionen
verschiedene Skalen $Q^2 = \mu^2$