

Homework 13

1. (20 points) Obtain condition on splitting functions from the condition of the total momentum conservation of the partons in the nucleon.

2. (20 points) Using regularization procedure and integral condition $\int_0^1 P_{qq}(z) dz = 0$ obtain the splitting function $P_{qq}(z)$ for whole range of z .

3. (20 points) Using the regularization procedure and momentum conservation condition obtain the splitting function $P_{GG}(z)$ for whole range of z

4. (20 points) Obtain the master equation for evolution of quarks in the nucleon.

5. (20 points) Obtain the master equation for evolution of gluons in the nucleon.