

Università degli Studi di Pavia
DOTTORATO DI RICERCA IN FISICA

CORSO DI SEMINARI DI INDIRIZZO TEORICO

A.A. 2007/2008

Giovedì 13 Dicembre 2007, ore 16.00

Sala Riunioni INFN

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**Total resummation of the leading
logarithms of x versus standard
approach of deep inelastic scattering**

Abstract

Standard Approach (SA) is based on the DGLAP evolution equations and the special fits for the initial parton densities that include a large number of phenomenological parameters. SA accounts for the total resummation of logs of Q^2 and lacks the resummation of $\log(1/x)$. Therefore, SA should be used in the region of large x and Q^2 only. However, it is often applied for analysis of experimental data in the small- x region. In order to be consistent at small x , SA, without theoretical grounds, includes the singular factors $x^{(-a)}$ in the fits for initial parton densities. This factors ensure the steep rise (the Regge behavior) of the structure function g_1 at small x and mimic the resummation of $\ln(1/x)$. When the resummation is accounted for, the fits can be simplified down to normalization constants. Alternative to SA approaches account for the total resummations of leading logarithms of x . For the unpolarized DIS, they involve the BFKL Pomeron; the polarized DIS was studied in our papers. I give a brief review on these approaches and compare them to SA.

Gli studenti di Dottorato e tutti gli interessati sono cordialmente invitati

Barbara Pasquini
Titolare del Corso