



Università degli Studi di Cagliari
Dipartimento di Fisica



Istituto Nazionale di Fisica Nucleare
Sezione di Cagliari
High Energy Theory
Group

Avviso di Seminario

Giovedì 20 ottobre 2005
h. 16:00 – Aula C

Prof. Boris Ermolaev

Ioffe Physico-Technical Institute, St. Petersburg, Russia

DGLAP for the polarized Deep Inelastic
Scattering vs total resummation of leading
logarithms of x

DGLAP accounts logarithms of Q^2 to all orders in α_s and neglects the total resummation of $\ln x$. When such a resummation is done, it leads to new expressions for the coefficient functions and anomalous dimensions for the structure function g_1 and leads to the conclusion that DGLAP should not work for $x < 0.05$. However it is known that DGLAP works successfully at the small- x region. The reason is that the standard DGLAP fits for the initial parton densities always include the phenomenological factors singular when $x \rightarrow 0$. They mimic the total resummation of logarithms of x and ensure the rise of g_1 at small x . When the $\ln x$ -resummation is accounted for, the conventional, rather complicated DGLAP fits can be considerably simplified, down to a constant.