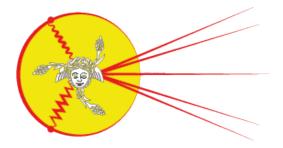Contribution ID: **148**   Type: **not specified**

New developements in the statistical approach of parton distributions: tests and predictions up to LHC energies

Sunday, 4 September 2016 10:35 (20 minutes)

The quantum statistical parton distributions approach proposed more than one decade ago is revisited by considering a larger set of recent and accurate Deep Inelastic Scattering experimental results. It enables us to improve the description of the data by means of a new determination of the parton distributions. This global next-to-leading order QCD analysis leads to a good description of several structure functions, involving unpolarized parton distributions and helicity distributions, in a broad range of x and Q^2 and in terms of a rather small number of free parameters. There are several challenging issues,in particular the behavior of $\bar{d}/\bar{u}$ at large x, a possible large positive gluon helicity distribution, etc . The predictions of this theoretical approach will be tested for single-jet production and charge asymmetry
in $W^{\pm}$ production in $\bar{p}p$ and pp collisions up to LHC energies, using recent data and also for forthcoming experimental results.

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