



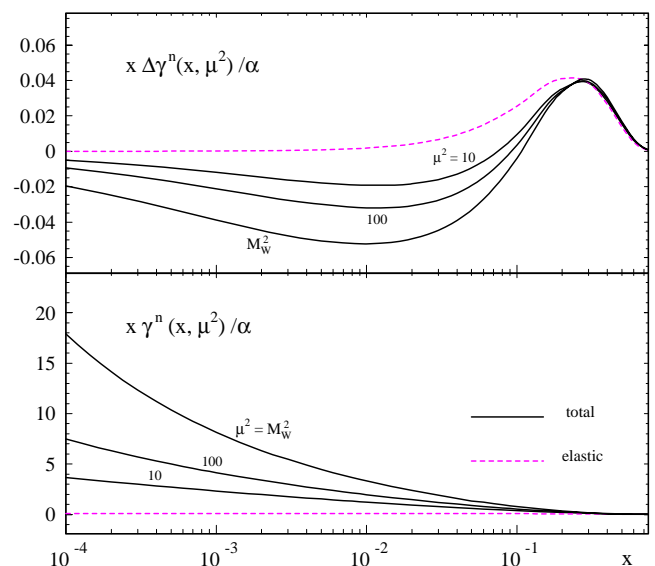
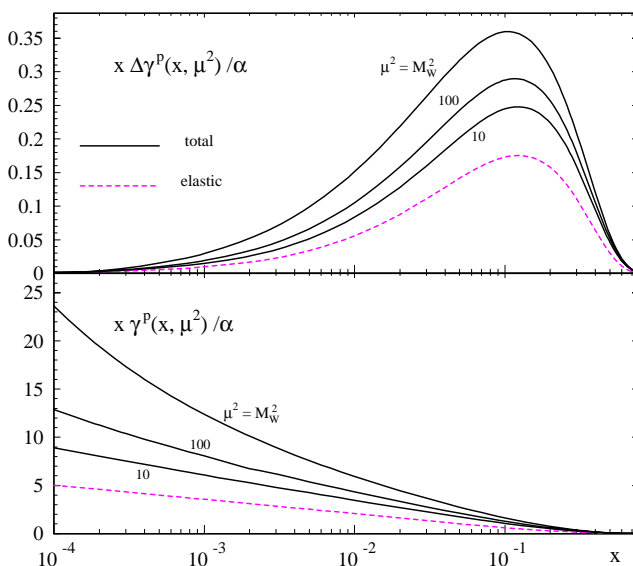
# Avviso di Seminario

Lunedì 19 Giugno 2006  
h. 16:00 – Aula C

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DESY - Hamburg

## THE POLARIZED AND UNPOLARIZED PHOTON CONTENT OF THE NUCLEON

The polarized and unpolarized photon distributions of the nucleon (proton, neutron)  $(\Delta)\gamma^N$ , evaluated in the equivalent photon approximation (EPA), are computed theoretically and the possibility of their experimental determination is demonstrated. Both of them consist of two components: the elastic ones,  $(\Delta)\gamma_{el}^N$ , due to  $N \rightarrow \gamma N$ , and the inelastic ones,  $(\Delta)\gamma_{inel}^N$ , due to  $N \rightarrow \gamma X$ , with  $X \neq N$ . Special attention is devoted to the QED Compton process in  $eN \rightarrow e\gamma N$  and  $eN \rightarrow e\gamma X$ , which is one of the most important reactions for directly measuring the photon content of the nucleon and testing the reliability of the EPA. Furthermore, it is discussed how such measurements can provide additional, independent information concerning the usual polarized and unpolarized structure functions.



The polarized and unpolarized total photon contents of the proton (left) and of the neutron (right), at some typical fixed values of  $\mu^2$  (in  $\text{GeV}^2$ ).