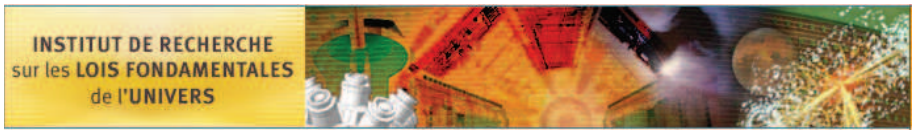
Service de Physique Nucléaire



Séminaire

le vendredi 3 décembre 2010 à 11h

CEA Saclay, Orme des Merisiers, Bât. 703, Salle 135

Nucleon Structure Studies Using Transverse Spin and Transverse Momentum Distributions

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To describe the quark structure of the nucleon at leading twist, in addition to the unpolarized and helicity parton distribution functions the transversity distributions have to be taken into account. Transversity asymmetries are measured in semi-inclusive deep-inelastic scattering (SIDIS) of leptons on transversely polarized nucleons. Transversity distributions are accessed via the Collins mechanism, which describes the fragmentation of transversely polarized quarks into unpolarized hadrons and via the polarized dihadron interference, which describes the fragmentation of transversely polarized quarks into two unpolarized hadrons.
In addition, intrinsic transverse momentum of quarks inside a nucleon play a role. The transverse momentum dependent (TMD) distribution functions are today considered as a crucial ingredient in understanding the structure of the nucleon. Some of these TMD distributions can also be extracted in SIDIS, by looking at the azimuthal distributions of the produced hadrons. Among these, the Sivers function, which describes the correlation between the quark transverse momentum and the nucleon transverse polarization vector, is presently the most widely studied. In this talk the measurement of these functions in SIDIS by the COMPASS collaboration using a muon beam scattered off transversely polarized protons are presented.

Le café sera servi 10 minutes avant

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