

Service de Physique Nucléaire



Séminaire

le vendredi 28 juin 2013 à 11h00

ATTENTION : Salle inhabituelle !!

Orme des Merisiers, Bât 709 (SAP), salle 3 (salle Cassini, RdC)

Strange and heavy quark PDFs in the nucleon

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Global analyses of Parton Distribution Functions (PDFs) have provided incisive constraints on the up and down quark components of the proton, but constraining the other flavor degrees of freedom is more challenging. Higher-order theory predictions and new data sets have contributed to recent improvements. Despite these efforts, the strange quark PDF has a sizable uncertainty, particularly in the small x region. We examine the constraints from experiment and theory, and investigate the impact of this uncertainty on LHC observables. In particular, we study W/Z production to see how the s -quark uncertainty propagates to these observables, and examine the extent to which precise measurements at the LHC can provide additional information on the proton flavor structure. We then discuss the theoretical treatment of heavy quarks in perturbative QCD and hence in global analyses. We discuss experimental constraints on the charm quark PDF and propose ways how to find or constrain a possible non-perturbative intrinsic charm/bottom distribution in the nucleon.

Le café sera servi 10 minutes avant

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