

Service de Physique Nucléaire



Séminaire

le vendredi 22 juin 2012 à 14h

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

Physics opportunities of a fixed target experiment (AFTER) using the LHC beams.

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Beam extraction technique by a bent crystal offers the possibility to obtain a clean and collimated high energy beam without altering the performance of the LHC. The multi-TeV proton and ion beams will allow for the most energetic fixed-target experiments ever performed with high luminosities. Such an experiment, tentatively named AFTER for "A Fixed Target ExpeRiment" gives access to new domains of particle and nuclear physics complementing that of collider experiments, in particular, that of the Brookhaven's Relativistic Heavy Ion Collider (RHIC) and the projects of Electron-ion colliders (EIC). By instrumenting the target-rapidity region, gluon and heavy-quark distributions in the proton, the neutron and the nuclei can be accessed at large x . The fixed-target mode has the advantage to allow for spin measurements with polarized target and for target-species versatility providing the opportunity to study nuclear matter, including the quark-gluon plasma. In this seminar, I will outline the physics opportunities offered by the fixed-target mode at the LHC as well as the expected luminosities and I will present a tentative design for the AFTER experiment.

Le café sera servi 10 minutes avant

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