irfu
institut de recherche sur les lois fondamentales de l'univers
saclay

Séminaire SPP

Mardi 10 avril 11h00

CEA-Saclay Bat 141, salle André Berthelot

Understanding nucleus-nucleus collisions at the LHC

Jean-Yves Ollitrault

IPhT

I review recent selected developments in the theory and modeling of ultrarelativistic heavy-ion collisions. I first show selected recent data from the LHC. I use them as illustrations to introduce phenomena which are specific to nucleus-nucleus collisions at high energies, namely, jet quenching and collective flow. I show that our qualitative understanding of these phenomena has made significant progress over the last two years. I then describe how quantitative prediction is made : I explain why relativistic viscous hydrodynamics is now used to model the expansion of the matter formed in these collisions. I give examples of prediction for nucleus-nucleus collisions at the LHC. I show how they compare with the first data, and what they can tell us about the properties of the quark-gluon plasma.

Le café sera servi 10 minutes avant.

NB : La présentation d'une pièce d'identité est exigée à l'entrée du centre. Tous les auditeurs extérieurs sont priés de prévenir à l'avance Emilie Chancrin, tél. 01 69 08 23 50, e-mail : `emilie.chancrin@cea.fr`. (U.E. : délai de 24 h, hors U.E. : délai de 4 jours).