



LHC Seminar

SPEAKER: Leticia Cunqueiro Mendez (CERN)

TITLE: **Jets with ALICE: from vacuum to high-temperature QCD**

DATE: Tue 16/12/2014 11:00

PLACE: Main Auditorium

ABSTRACT

ALICE measures jets in pp, p-Pb and Pb-Pb collisions to study modifications of the jet fragmentation due to cold nuclear and hot QCD matter. In pp collisions ALICE has measured inclusive jet yields, the ratio of yields with different resolution R , a variety of jet shapes and the semi-inclusive rate of jets recoiling against a high transverse momentum hadron trigger. These measurements are compared to NLO calculations including hadronization corrections and to MC models. Jets in pp are primarily conceived as a vacuum reference for jet observables in p-Pb and Pb-Pb collisions. In p-Pb collisions ALICE explores cold nuclear matter effects on jet yields, jet fragmentation and dijet acoplanarity. The hot and dense medium created in heavy-ion collisions is expected to modify the fragmentation of high energy partonic projectiles leading to changes in the energy and structure of the reconstructed jets with respect to pp jets. The study of modified jets aims at understanding the detailed mechanisms of in-medium energy loss and their relation to fundamental properties of the medium itself. In Pb-Pb, ALICE has reported measurements of intra-jet and inter-jet broadening of inclusive and recoil jets, the latter being a sub-sample with larger, on average, in-medium path length. Hadron-jet coincidence measurements allow to correct for the large underlying event background at the ensemble level without imposing bias on the jet population, down to low jet p_T of 20 GeV/c and arbitrarily large jet resolution R . The angular distribution of the recoil jet yield relative to the hadron trigger axis is used to explore medium-induced large angle deflection. Comparisons to theory calculations and prospects for new measurements will be discussed as well.

Organised by: M. Mangano, C. Lourenco, G. Unal.....

Tea and Coffee will be served at 10h30