Contribution ID: **153** Type: **Contributed Talk**

Neutral meson production in pp and Pb-Pb collisions measured by ALICE at LHC

Tuesday 20 May 2014 15:00 (20 minutes)

The ALICE experiment at LHC performs measurements of neutral meson inclusive spectra in mid-rapidity in a wide p_{T} range in pp, p-Pb and Pb-Pb collisions, as well as correlations between leading π^0 and charged hadrons. Neutral mesons π^0, η, ω are reconstructed via complementary methods, using the ALICE electromagnetic calorimeters and by the central tracking system identifying photons converted to e^+e^- pairs in the material of the inner barrel detectors. Measurements of neutral meson spectra in pp collisions at energies $\sqrt{s}$ = 0.9, 2.76, 7 TeV provide valuable data for pQCD calculations and allow to study scaling properties of hadron production at the LHC energies. The study of neutral meson production in p-Pb collisions at $\sqrt{s} = 5.02$ TeV is of importance to confirm that the strong suppresion observed in central Pb-Pb collisions is a final-state effect of the produced dense medium. The nuclear modification factor R_{AA} of the π^0 production in Pb-Pb collisions at $\sqrt{s_{\mathrm{NN}}}$ = 2.76 TeV at different collision centralities shows a clear pattern of strong suppression in a hot QCD medium with respect to pp collisions. We shall also present the current status of correlation measurements between π^0 or isolated photons triggered by the electromagnetic calorimeter EMCAL, and charged hadrons detected in the central tracker.

On behalf of collaboration:

ALICE

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Session Classification: Jets

Track Classification: Jets