
Contribution ID: **67** Type: **Contributed Talk**

# Production of pi0, kaons and eta mesons in Pb-Pb and pp collisions at $\sqrt{s}$ =2.76 TeV measured with the ALICE detector at the LHC

*Thursday, 30 June 2016 11:00 (20 minutes)*

One of the key signatures of the Quark-Gluon Plasma (QGP), is the modification of hadron transverse momentum differential cross-sections in heavy-ion collisions (HIC) as compared to proton-proton (pp) collisions. Suppression of hadron production at high transverse momenta ($p_{\mathrm{T}}$) in HIC has been explained by the energy loss of the partons produced in the hard scattering processes which traverse the deconfined quantum chromodynamic (QCD) matter. The dependence of the observed suppression on the $p_{\mathrm{T}}$ of the measured hadron towards higher $p_{\mathrm{T}}$ is an important input for the theoretical understanding of jet quenching effects in the QGP and the nature of the energy loss.
The ALICE experiment at the Large Hadron Collider (LHC) performs a variety of measurements from which spectra of neutral mesons and kaons at mid-rapidity in a wide $p_{\mathrm{T}}$ range in *pp*, *p*-Pb and Pb-Pb collisions will be of particular interest for this presentation.

Neutral mesons ($\pi^0$, $\eta$, $\omega$) are reconstructed via complementary methods, using the ALICE electromagnetic calorimeters, PHOS and EMCal, and by the central tracking system, identifying photons converted into $e^+e^-$ pairs in the material of the inner barrel detectors: the Time projection Chamber(TPC) and the Inner Tracking System (ITS). Kaon particle identification is performed using the TPC, the ITS as well as the Time of Flight system (TOF).

In this presentation, an overview of ALICE results in HIC and pp collisions at $\sqrt{s}$ =2.76 TeV of current measurements of neutral pions, kaons and eta mesons as a function of $p_{\mathrm{T}}$ and centrality will be given. Ratios $\eta/\pi^0$, $\mathrm{K}^{\pm}/\pi^{+}-$ as well as comparisons to model calculations will also be presented.

## On behalf of collaboration:

ALICE

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**Session Classification:** Particle Production