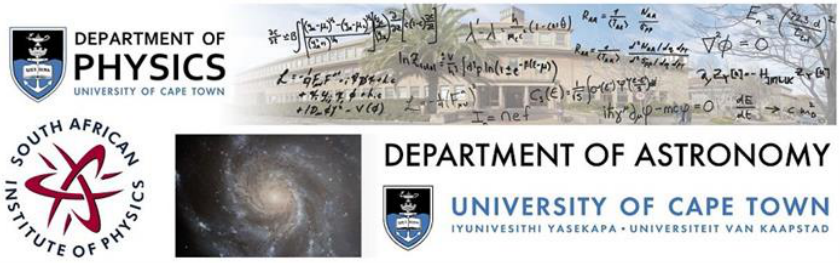

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Neutral meson and direct photon measurement with ALICE

Wednesday, 6 July 2016 15:20 (20 minutes)

Abstract content
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The verification of the existence of the Quark-Gluon Plasma (QGP) produced in high energy heavy-ion collisions is a procedure requiring the measurement of several complementary observables. Among these observables, is the measurement of direct photons. The direct photon spectrum, at high p_T, is expected to be dominated by prompt photons
produced by hard initial scatterings in the earliest phases of the collision - describable using the methods of NLO pQCD - and at low p_T by thermal photons produced in thermal scatterings in the QGP and hot hadronic gas phase. Neutral mesons, particularly &pi⁰ and &eta mesons, are the dominant source of decay photons in pp and Pb-Pb collisions, and their precise measurement is required in order to disentangle the decay and direct photon signals within the inclusive photon spectrum. High-quality measurements in pp collisions are required as a reference for Pb-Pb collisions. The ALICE detector is capable of accurately measuring neutral meson spectra over a large p_T range, via the use of several complementary measuring techniques. The Photon Conversion Method, discussed somewhat in detail in this presentation, uses the ITS and TPC subdetectors and is well suited to performing such measurements over low to intermediate p T . The PHOS and EMCal electromagnetic calorimeters on the other hand, are adept at performing measurements within the intermediate to high p T region. In this presentation, measurements of &pi⁰'s and &eta's obtained from the ALICE
experiment, for pp collisions at several collisional center of mass energies (√s_{NN}), from √s = 0.9 TeV to 8 TeV and in Pb-Pb collisions at √s_{NN} = 2.76 TeV, along with direct photon measurements will be presented.

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