



Contribution ID: 69

Type: **Contributed Talk**

Anisotropic flow measurements at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE

Thursday 30 June 2016 11:40 (20 minutes)

Anisotropic flow is a sensitive probe of the initial conditions and the transport properties of the Quark Gluon Plasma (QGP) produced in heavy-ion collisions. In this talk, we present the first results of elliptic (v_2), triangular (v_3) and quadrangular flow (v_4) of charged particles in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ALICE detector. An increase of anisotropic flow coefficients v_2 , v_3 and v_4 is observed as compared to results from Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV, which occurs in conjunction with an increase of the average transverse momentum with the increase in beam energy.

In addition, the comparison of experimental measurements to various theoretical calculations will be discussed. This provides a unique opportunity to test the validity of the hydrodynamic picture and discriminates between various possibilities for the temperature dependence of shear viscosity to entropy density ratio of the produced QGP.

Furthermore, we will also give an outlook to future studies of anisotropic flow at the LHC. These studies will shed new insight into the physics in an unexplored region which is at the highest temperature and with a closed to zero baryon chemical potential in the QCD phase diagram.

On behalf of collaboration:

ALICE

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Session Classification: Flow