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## $\pi^0$ -hadron correlations in pp and Pb-Pb collisions and $\pi^0$ elliptic flow in Pb-Pb collisions measured at the ALICE experiment

Sunday 25 September 2016 08:30 (20 minutes)

The study of the azimuthal correlation and anisotropy with  $\pi^0$  offers a powerful way to investigate the properties of strongly interacting matter created in ultra-relativistic heavy-ion collisions. In this talk, we present the measurement of two-particle correlations of  $\pi^0$  trigger particles with associated charged particles versus azimuthal angle difference ( $\Delta\varphi$ ) in pp and central Pb-Pb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV, as well as the measurement of the elliptic flow ( $v_2$ ) of  $\pi^0$  in Pb-Pb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV at the ALICE experiment.  $\pi^0$  are detected by the ALICE electromagnetic calorimeter EMCal for transverse momenta  $8 < p_T < 16$  GeV/c, and charged particles are measured by the ALICE main tracking detectors ITS and TPC for  $0.5 < p_T < 10$  GeV/c, both at mid-rapidity. For  $\pi^0$ -hadron correlations, the per-trigger yield modification factors ( $I_{AA}$ ) are extracted on the near and away side and are compared with results from models and other experiments. For  $\pi^0$   $v_2$ , the current status will be presented. Both measurements serve as important investigation of the medium modified fragmentation pattern and the path-length dependence of energy loss in QGP, as well as the corresponding physics interpretation.

### Summary

### Presentation type

Oral

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