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## Elliptic azimuthal anisotropy of neutral pions in PbPb collisions at 2.76 TeV with CMS

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The first measurements of the elliptic azimuthal anisotropy of neutral pions,  $\pi^0$ s, produced in 2.76 TeV PbPb collisions will be presented. The results are based on data collected by the CMS experiment during the 2010 LHC running period. The amplitudes of the second Fourier component ( $v_2$ ) of the  $\pi^0$  azimuthal distributions are extracted using an event-plane technique. The values of  $v_2$  are studied as a function of the neutral pion transverse momentum ( $p_T$ ) for different centrality classes in the kinematic range  $p_T = 1.6 - 8$  GeV/c, and  $|\eta| < 0.8$ . The CMS measurements of  $v_2(p_T)$  agree with previously reported  $\pi^0$  azimuthal anisotropy results from 200 GeV AuAu collisions measured by the PHENIX experiment at RHIC, despite a factor of  $\sim 14$  increase in the center-of-mass energy. A comparison of the CMS measurements of  $v_2(p_T)$  from  $\pi^0$  mesons and inclusive charged particles reveals a systematic difference in the range of  $p_T = 2.5 \sim 5$  GeV/c, with the neutral pion anisotropies being weaker than those observed for inclusive charged particles. This difference indicates a particle-species dependence in the azimuthal anisotropy at the LHC.

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