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Anisotropic flow of charged hadrons, pions and (anti-)protons measured at high transverse momentum in Pb-Pb collisions at $\sqrt{s_{NN}}=2.76$ TeV $\hat{\sim} \dagger$

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Abstract

The elliptic, v_2 , triangular, v_3 , and quadrangular, v_4 , azimuthal anisotropic flow coefficients are measured for unidentified charged particles, pions, and (anti-)protons in Pb-Pb collisions at $\sqrt{s_{NN}}=2.76$ TeV with the ALICE detector at the Large Hadron Collider. Results obtained with the event plane and four-particle cumulant methods are reported for the pseudo-rapidity range $|\hat{\eta}| < 0.8$ at different collision centralities and as a function of transverse momentum, p_T , out to $p_T=20$ GeV/c. The observed non-zero elliptic and triangular flow depends only weakly on transverse momentum for

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of the difference between elliptic flow results obtained from the event plane and four-particle cumulant methods suggests a common

obtained from the event plane and four-particle cumulant methods suggests a common origin of flow fluctuations up to $p_T=8\text{GeV}/c$. The magnitude of the (anti-)proton elliptic and triangular flow is larger than that of pions out to at least $p_T=8\text{GeV}/c$ indicating that the particle type dependence persists out to high p_T .



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