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Measurement of charged jet v2 in Pb-Pb collisions at 5.36 TeV with ALICE

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A jet is a spray of collimated hadrons originating from the fragmentation of an energetic parton. In heavy-ion collisions, jets traverse the colored medium and lose energy via induced gluon radiation and elastic scattering, which modify jet yields and structure. When the overlap of the colliding nuclei is small, the transverse profile of the quark-gluon plasma (QGP) is expected to become more elliptical in shape. This geometrical shape results in different QGP path lengths for partons emitted at different angles, resulting in an azimuthal anisotropy of the energy loss. This anisotropy alters the pT differential yield of jets and is quantified by the second-order flow coefficient, v2, of the jets. Therefore, measurements of jet v2 are expected to be sensitive to QGP properties and to the path length dependence of energy loss. Based on the high statistics data samples collected during Run 3, using ALICE upgraded detectors, we present the first analysis of inclusive charged-particle jet v2 in Pb-Pb collisions at \sqrt{s_{\rm NN}} = 5.36 TeV. The low pT reach of this measurement, which is unique to ALICE, is especially important in constraining theoretical models and elucidating the mechanisms which generate jet v2. The results will be also compared to existing jet v2 measurements.

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