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Measurement of the jet-particle v_2 in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE at the LHC

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In heavy-ion collisions, the observed non-zero second-order azimuthal anisotropy coefficient, v_2 , for particles with high transverse momenta p_T is driven by the path-length dependent energy loss of hard partons traveling in the QGP, known as the jet quenching effect. Recent measurements show also a non-zero v_2 values for high p_T charged particles at high multiplicities in small collision systems (pp and p-Pb). Various mechanisms, such as parton energy loss in the cold nuclear matter, hydrodynamic evolution in the final state and initial state gluon correlations, are proposed to describe the observations whose origin is still debated.

In this contribution, the v_2 of particles within jets at mid-rapidity ($-0.8 < \eta < 0.8$) in the 10% most central p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV, measured with the ALICE detector, is presented. The v_2 signal of jet particles is extracted with 2-particle correlation method using a template fit and subsequently long-range correlations with particles at forward rapidities. The non-flow contribution is suppressed by subtracting the low-multiplicity from high-multiplicity collisions. The measurements will provide new insight into the understanding of the origin of long-range correlations observed in small systems.

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