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Measurement of azimuthal anisotropy at high p_T using subevent cumulants in pPb collisions at CMS

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Measurements at the LHC have provided evidence for collective behavior in high-multiplicity proton-proton (pp) and proton-lead (pPb) collisions through multiparticle correlation techniques. To investigate detailed properties of this collectivity, a comprehensive study of differential Fourier coefficients (v_n) in particle transverse momentum (p_T) and event multiplicity is presented in pPb collisions recorded by the CMS experiment at a nucleon-nucleon center-of-mass energy $\sqrt{s_{NN}} = 8.16$ TeV. In particular, new measurements of p_T -differential multiparticle cumulants using the subevent cumulant method in distinct subevent regions are presented. Relative to past CMS measurements, the new study probes an extended phase space region up to a high particle p_T , putting the observation of nonzero high- p_T v_2 in a small-sized medium into stringent tests.

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