

Investigations of anisotropic collectivity using multi-particle correlations in pp, p-Pb and Pb-Pb collisions with ALICE

Wednesday, February 8, 2017 10:40 AM (20 minutes)

Two- and multi-particle azimuthal correlations have proven to be an excellent tool to probe the properties of the Quark-Gluon Plasma created in Pb-Pb collisions.

Recently, the results obtained for multi-particle correlations has been interpreted as evidence for collectivity in the small pp and p-Pb collision systems providing new insights into the systems' fluctuating initial conditions.

In this talk, we present the first ALICE results of two- and multi-particle cumulants at midrapidity $|\eta| < 1.0$ as a function of multiplicity in pp collisions at $\sqrt{s} = 13$ TeV.

Results will be compared to a broad range of collision systems and energies, including pp collisions at $\sqrt{s} = 7$ TeV, p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV, and Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV and $\sqrt{s_{NN}} = 5.02$ TeV. The azimuthal correlations obtained from Monte Carlo simulations will be presented for comparison. These results allow further insight into the matter created in pp collisions, and will broaden our knowledge about the initial conditions in such small collision systems.

Using ALICE's forward detectors, two-particle correlations with a very large $\Delta\eta$ range of $|\Delta\eta| < 8.5$ will be also discussed. This should shed new light into the nature of long-range correlations observed in small collision systems, and help probe the extent of the ridge in pp collisions.

Preferred Track

Collective Dynamics

Collaboration

ALICE

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