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Measurement of two-particle number and transverse momentum correlation functions with ALICE at the LHC

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Measurement of charge-independent and charge-dependent two-particle number correlations (R_2) and transverse momentum correlations (P_2) provide key information about particle production mechanism, diffusivity, conservation of charge and momentum in high-energy collisions. These observables are measured in pp collisions at $\sqrt{s} = 13$ TeV within transverse momentum range of $0.2 \leq p_T \leq 2.0$ GeV/c, to better understand the jet contribution and nature of collectivity in small systems. The shapes of R_2 and P_2 on the near- and away-side are qualitatively similar but quantitatively different. Moreover, the narrower width of P_2 compared to R_2 is also observed in pp collisions, as in the recently published ALICE results in p-Pb and Pb-Pb collisions. These results served as a baseline for p-Pb and Pb-Pb results, as they are sensitive to the interplay between the underlying event and mini-jets in pp collisions.

Primary author(s) : SAHOO, Baidyanath (IIT- Indian Institute of Technology (IN) Bombay)

Presenter(s) : SAHOO, Baidyanath (IIT- Indian Institute of Technology (IN) Bombay)

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