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Triggered di-hadron correlations in PbPb collisions from the ALICE experiment

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Angular correlations between unidentified hadron trigger and associated particles are measured by the ALICE experiment for $0.5 < p_t^{(t),(a)} < 15$ GeV/c, where $p_t^{(t)} > p_t^{(a)}$. The modification of conditional yields in central Pb–Pb collisions is measured with respect to p–p (I_{AA}) and with respect to peripheral events (I_{CP}). Significant suppression is observed on the side opposing the trigger, while an enhancement is measured on the near side. The latter result is a notable departure from RHIC measurements. In addition, the shape of the pair azimuthal distribution is examined in a variety of centrality categories for pairs in $|\eta| < 0.8$ where $|\eta^{(t)} - \eta^{(a)}| > 0.8$. A set of two-particle Fourier components $V_{n\Delta} \equiv \langle \cos(n\Delta\phi) \rangle$ are computed directly from the long-range azimuthal correlation functions. A series including $V_{1\Delta}$ to $V_{5\Delta}$ describes the data. For each n, a fit is applied over all p_T bins simultaneously to test the collectivity hypothesis $V_{n\Delta} \simeq v_n^{(t)} v_n^{(a)}$. This factorization hypothesis is satisfied at low p_T but not at higher p_T. The divergence between the data and the global fit provides a new measure of the onset of nonflow dominance in long-range correlations due to the away side jet. The first five single-particle v_n coefficients are presented as new results from the global fit, and are compared to v_n values measured by more established methods.

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