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Overview of results on flow and correlations from the CMS collaboration

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This talk will present an overview of collective flow phenomena and dihadron correlations from the CMS experiment at the LHC in pp and PbPb collisions. Fourier components of the anisotropic azimuthal distribution, ranging from the second to the sixth component, are obtained using different analysis techniques, which have different sensitivities to non-flow and flow fluctuation effects. Utilizing a novel and unique high-pT single-track high-level trigger, the results are presented over a broad pT range up to approximately 60 GeV/c, as a function of pseudorapidity and collision centrality. These new data will provide essential information on both the hydrodynamic properties of the medium at low pT and path length dependence of in-medium parton energy loss at high pT. Dihadron correlations are measured over a wide acceptance and pT range. Long-range near-side ("ridge") correlation structures are observed from low pT (1 GeV/c) to very high pT (at least 20 GeV/c). Their connection to the single-particle azimuthal anisotropy is extensively investigated via the factorization studies of Fourier decomposition of dihadron correlations. Short-range jet-like correlations are also systematically studied as a function of pT, pseudorapidity, centrality and compared to the results in pp collisions.

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