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Correlation of flow coefficients measured in Au+Au collisions at 1.23 AGeV with HADES

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HADES has a large acceptance as well as excellent particle identification capabilities and therefore allows the study of dielectron, hadron, and light nuclei production in heavy-ion collisions with great precision. The harmonic flow coefficients v_n of the order $n = 1-6$ are measured with HADES as a function of centrality, transverse momentum, and rapidity in Au+Au collisions at 1.23 AGeV. Combining them allows to construct for the first time a complete, multi-differential picture of the emission pattern as a function of rapidity and transverse momentum.

The predictions of ideal hydrodynamic simulations, confirmed by transport model calculations, suggest a scaling between various flow coefficients. For protons at mid-rapidity the ratio $v_4/(v_2)^2$ is found to be close to 0.5. The correlations of flow coefficients are investigated based on an event-by-event selection of the mid-rapidity final state elliptic flow of protons. The correlations are compared to the results of transport models and to eccentricity calculations within the Glauber Monte Carlo approach.

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Category

Experiment

Collaboration (if applicable)

HADES

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