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Multiplicity and rapidity dependence of v2 in small system by using two-particle correlations

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Recent PHENIX measurements indicate that the initial geometry is the cause of the observed positive v_2 and v_3 in high-multiplicity p+Au, d+Au, and ^{3}He+Au collisions at $\sqrt{s_{\rm NN}} = 200$ GeV. These results were obtained using the event-plane method, with the event plane determined in the backward rapidity range and correlated with particles in other sub-events at mid- and forward-rapidity. In this poster, we present the latest PHENIX measurements, in which we employ the two-particle correlation method and investigate the effects of the size of the rapidity gap between particles as well as different non-flow subtraction methods in order to understand possible non-flow contributions to the observed v_2. We also extend the measurements of v_2 from most-central to peripheral collisions to understand the centrality evolution of v_2 in small systems. In this poster, we will present the current analysis status of v_2 measurement via the two particle correlation analysis with various subtraction methods in a wide centrality range of p+Au collisions at $\sqrt{s_{\rm NN}} = 200$ GeV.

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