Study of flow factorization with two particle azimuthal correlation DANIEL KIKOLA, FUQIANG WANG, Purdue University — Elliptic flow \( v_2 \) provides information about initial expansion of the medium created in non-central heavy ion collisions. However non-flow effects, such as jet correlation, can contribute significantly to the measured \( v_2 \). In this talk we investigate the possibility of separating flow and non-flow components of \( v_2 \) \( (v_n \) in general) measured via two particle azimuthal correlations. If the observed azimuthal anisotropy is due to global flow, then coefficients \( v_{n,n}(p_T^a, p_T^b) \) in Fourier decomposition of two particle correlation function \( dN/d\Delta\phi \) factorize into product of single particle flow coefficients: \( v_{n,n}(p_T^a, p_T^b) = v_n(p_T^a)v_n(p_T^b) \). Deviation from \( v_{n,n} \) factorization indicates a significant non-flow contribution. We investigate the flow and non-flow contributions to two particle azimuthal correlations with model of heavy ions dynamics which includes particles from hydro medium (with a given anisotropic flow) and jet correlations simulated with Pythia. We discuss the feasibility of separation of flow and nonflow in the real data based on the hypothesis of \( v_{n,n} \) factorization for a global flow.

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Date submitted: 01 Jul 2011

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