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Measurement of higher-order flow harmonics in sqrt(s_NN)=2.76 TeV Pb+Pb collisions with the ATLAS detector at the LHC

Collective harmonic flow and jet-medium interactions are two phenomena under intense study in ultra-relativistic heavy ion collisions at RHIC and the LHC. One outstanding question is how to disentangle these two contributions for various single and multiple particle observables. Both higher-order harmonic flow (v_1, v_2, v_3, ...) and jet-medium interactions, for example, have been argued to be responsible for several novel structures observed in two-particle $\Delta\eta$ and $\Delta\phi$ correlations. In this poster, we present ATLAS measurement of two particle correlation in a broad momentum and centrality range. We carry out a Fourier analysis of the correlation function and extract the individual flow harmonics. We compare the first six terms(v_1-v_6) with those measured independently from an event plane method. We discuss the impact of these results for disentangling harmonic flow and jet-medium effect, and for understanding the nature of transition from the flow-dominated low p_T region to the jet-dominated high p_T region.

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