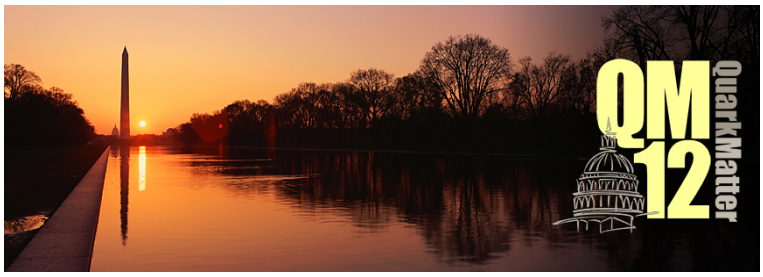

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Collective Flow of Charged Hadrons in Cu+Cu collisions at $\sqrt{s_{NN}}$ = 200 GeV at RHIC PHENIX

Thursday, August 16, 2012 4:00 PM (2 hours)

The collective flow of charged hadrons emitted in heavy ion collisions can be characterized using the Fourier coefficient v_2 (elliptic flow), as well as with the higher order coefficients, v_3, v_4, etc, which result primarily from fluctuations in the initial conditions of the colliding nuclei.The latter is of paramount importance since it can provide insight on the hydrodynamic behavior of the medium, as well as constraints for reliable extraction of transport coefficients. For example, v_3 has been critical in discriminating between different models and the application of viscocity. In recent measurements, PHENIX has extracted $v_{2,3,4}$ coefficients for charged hadrons via two independent methods.
The first correlates the azimuthal distribution of particles at mid-rapidity in the central arm of PHENIX with event planes determined by the detectors widely spaced in pseudorapidity to avoid non-flow effects.
The second method is a two particle correlation between a charge weighted azimuthal angle in the Beam Beam Counters and the azimuthal angle of a track in the central arms of the PHENIX detector. Again, the pseudorapidity gap is present to avoid non-flow effects. This method has the added benefit of not requiring that the reaction plane angle be determined.
These coefficients, measured as a function of the number of particpating nucleons, centrality, and p_T for charged hadrons, will be presented and compared to earlier measurements for Au+Au collisions at the same energy so as to see the effect of system size.

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