

Abstract Submitted
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Directed and Elliptic flow measured by STAR Experiment for AuAu collisions at $\sqrt{s_{NN}}=200$ GeV AIHONG TANG, Brookhaven National Lab, STAR COLLABORATION — With large statistics obtained in RHIC run VII, directed flow measurements for charged particles are extended to p_t as large as 8 GeV/c, for AuAu collisions at $\sqrt{s_{NN}}=200$ GeV. The directed flow of pion, proton, kshort and lambda will be reported. The wiggle structure as a signature of the first order phase transition is not observed within the statistical significance of the present measurements. Comparison to previous measurements will be made. Elliptic flow scaled by initial eccentricity (v_2/ε) as a function of particle density in the transverse plane ($1/S dN/dy$) is fitted with transport model motivated formula. Measurements of event anisotropy at $\sqrt{s_{NN}}=200$ GeV are compared to transport calculations. It is found that the $1/S dN/dy$ dependence of v_2/ε can be described well by transport models with finite Knudsen numbers. The result indicates that the system has not yet reached ideal hydrodynamic limits even for central collisions. Constrains on the product of the cross section and the speed of sound are provided, η/s is estimated. The Knudsen fit is also applied to v_2 from viscous hydro calculations and the result is compared to data.

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