

# Study of identified particle higher harmonics azimuthal anisotropy in 200GeV Au+Au collisions at RHIC-PHENIX experiment

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Particle species dependence of transverse momentum distribution and azimuthal anisotropy have been studied actively because they reveal information about the QGP generated in high energy heavy ion collisions. From the study of elliptic event anisotropy  $v_{\{2\}}$ , we have understood that azimuthal anisotropy is generated by initial participant geometry, with a role for the QGP property  $\eta/s$  (the ratio of shear viscosity( $\eta$ ) to entropy density( $s$ )).

In recent years, higher harmonics azimuthal anisotropies  $v_{\{n \geq 3\}}$  are in focus because they are expected to be more sensitive to initial participant geometry and  $\eta/s$  than will be  $v_{\{2\}}$ .

Particle dependence of  $v_{\{n \geq 3\}}$  is obtained the same as  $v_{\{2\}}$ , the observed similarities and differences of identified particles  $v_{\{n\}}$  will be shown and discussed.

The parameters such as freeze-out geometry and expansion velocity as well as temperature at the freeze-out will also be extracted based on the Blast-Wave model and compared with other measurements like HBT and spectra.

## Keywords

azimuthal anisotropy

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