

# Azimuthal anisotropic flow of identified hadrons in Au+Au collisions in BES-II energies

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## 1 Abstract

Anisotropic flow of final state particles produced in heavy-ion collisions is one of the important probes to study the properties of the matter produced in these collisions. Elliptic flow ( $v_2$ ) and triangular flow ( $v_3$ ) parameters are the second and third order coefficients in the Fourier expansion of azimuthal distributions of the final state particles in the momentum space.  $v_2$  and  $v_3$  are sensitive to the equation of the state (EoS) and transport properties, such as shear viscosity to entropy density ratio ( $\eta/s$ ) of the medium.

Recently, STAR has completed the data taking of Beam Energy Scan phase-II (BES-II) with improved detector conditions and wider rapidity coverage. In this talk, using BES-II data, we will present the high precision measurements of  $v_2$  and  $v_3$  of identified hadrons,  $\pi^+(\pi^-)$ ,  $K^+(K^-)$ ,  $p(\bar{p})$ ,  $K_S^0$ ,  $\phi$ ,  $\Lambda(\bar{\Lambda})$ ,  $\Xi^-(\bar{\Xi}^+)$ , and  $\Omega^-(\bar{\Omega}^+)$  in Au+Au collisions at  $\sqrt{s_{NN}} = 14.6$  and 19.6 GeV. We will show the centrality, transverse momentum, rapidity dependence, and the number of constituent quark (NCQ) scaling of  $v_n$ . Finally, the physics implications of our measurements in the context of partonic collectivity will be discussed.