

Elliptic flow of identified particles in Au+Au collisions at $\sqrt{s_{NN}} = 14.6$ GeV

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1 The main purpose of the Relativistic Heavy Ion Collider (RHIC) at Brookhaven Na-
2 tional Laboratory (BNL), is to create new form of matter Quark Gluon Plasma (QGP) in
3 the laboratory and study quantum chromodynamics (QCD) phase structure. The initial
4 anisotropy in the coordinate space is translated into the anisotropy in the momentum
5 space. The elliptic flow (v_2) is sensitive to the early dynamic evolution of the system. It
6 is defined as the second harmonic coefficient of the Fourier decomposition of azimuthal
7 distribution with respect to the reaction plane angle. It can provide the possible signal
8 of QGP and phase transition.

9 In this talk, we will present v_2 of π^\pm , K^\pm , p , \bar{p} , K_S^0 , Λ , $\bar{\Lambda}$, Ξ , $\bar{\Xi}^+$ in Au+Au collisions
10 at $\sqrt{s_{NN}} = 14.6$ GeV. The v_2 results of pions, kaons and protons will be compared with
11 multi-strange hadrons. Number of constituent quark scaling will be tested as a function
12 of collision centrality. Collision energy dependence of NCQ scaling will be investigated by
13 a comparison to 19.6 and 3 GeV. We will also compare our results with transport model
14 calculations. Implications of these measurements in the context of QCD phase structure
15 at high μ_B region will be discussed.