# The elliptic flow of identified particles in Au + Au collisions at $\sqrt{s_{NN}}$ = 3.0-4.5 GeV from STAR

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The elliptic flow ($v_2$) is the second harmonic coefficient in a Fourier expansion of the azimuthal distribution with respect to the reaction plane. It is sensitive to the strength of interactions among the constituents and serves as an effective probe of the degrees of freedom within the system. The observation that Number of Constituent Quarks (NCQ) scaling is absent at 3 GeV indicates the absence of partonic effects in this system.

In this poster, we will present measurements of $v_2$ for $\pi^{\pm}$, $K^{\pm}$, $K^0_S$ and $\Lambda$ in Au + Au collisions at $\sqrt{s_{NN}}$ = 3.0-4.5 GeV from the RHIC-STAR experiment. The NCQ scaling will be tested as a function of collision energy. In addition, the $p_T$-integrated $v_2$ of identified particles will be shown as a function of energy. The inferred information related to the QCD phase structure will be discussed.