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Charge asymmetry dependency of $\{\pi\}/K$ anisotropic flow in U+U $\{\sqrt{s_{NN}}\}$ = 193 GeV and Au+Au $\{\sqrt{s_{NN}}\}$ = 200 GeV collisions at STAR

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Theoretical study \cite{myref1} indicates that a chiral magnetic wave at finite baryon density could induce an electric quadrupole moment in QGP produced in heavy-ion collisions. The electric quadrupole deformation will lead to a difference in elliptic flow of hadrons, by increasing { v_2 } of negatively charged hadrons and decreasing { v_2 } of positively charged ones. The magnitude of this difference is predicted to be proportional to the charge asymmetry { A_{ch} }, defined as { $A_{ch} \equiv (\bar{N}_+ - \bar{N}_-) / (\bar{N}_+ + \bar{N}_-)$ }. Such charge asymmetry dependency of pion elliptic flow has been observed in Au+Au collisions at the STAR experiment. \\

\newline

Here we present elliptic flow measurements of charged pions and kaons at low momentum, as a function of $\{A_{ch}\}$, in U+U collisions at $\{\sqrt{s_{NN}}\}$ = 193 GeV at STAR. The $\{v_2\}$ difference for charged kaons is suggested\cite{myref1} to have a weaker $\{A_{ch}\}$ dependency than that of pions due to hadronic effects. Our measurements for both serve as important consistency checks for the phenomena due to the chiral magnetic wave.

Author:SHOU, Qi-Ye (SINAP, BNL)Presenter:SHOU, Qi-Ye (SINAP, BNL)Session Classification:Flow