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Directed Flow in nucleus-nucleus collisions at BES RHIC and Equation of State

The directed flow was calculated in the UrQMD model for intermediate-centrality in A+A collisions at midrapidity for beam energy scan RHIC.

The flow development for protons and pions is investigated.

Directed flow slope $\frac{dv_1}{dy}$ versus beam energy at $\sqrt{S_{NN}} = 4-200\ GeV$ is obtained for p, $\bar{p}$, Λ, $\bar{\Lambda}$, K^+, K^-, π^+, π^-.

A comparison has been done with the STAR experimental data.

The influence of Equation of State, with and without potential, on the directed flow has been studied.

We found that potentials strongly influenced v_1 and could significantly improve the agreement with experimental data at low energies.

Primary author: VITIUK, Oleksandr (Taras Shevchenko National University of Kyiv)

Co-authors: BRAVINA, Larisa (University of Oslo (NO)); ZABRODIN, Evgeny (University of Oslo (NO)); KVASIUK, Yurii (Taras Shevchenko National University of Kyiv)

Presenter: VITIUK, Oleksandr (Taras Shevchenko National University of Kyiv)

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