

Abstract Submitted
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Energy Dependence of the v_2 scaling and the QCD Phase Boundary NU XU, Nuclear Science Division, Lawrence Berkeley National Laboratory — In high-energy nuclear collisions at RHIC ($s_{NN} = 60 - 200 \text{ GeV}$), the quark coalescence has been identified as the process for hadronization. As a result, one observes a scaling in elliptic flow parameter v_2 [1,2] and hadron type dependence (within $2 < p_T < 5 \text{ GeV}/c$ region) in nuclear modification parameter R_{AA} [1]. In a given collision when the center of mass energy is not sufficiently high to create partonic matter, one would not expect the scaling in the final observed v_2 . Hence, the scaling provides us a sensitive tool in order to search for the possible phase boundary in the hot/dense matter dominated by either partonic or hadronic degrees of freedom. In this talk, we will report the results from analyzing the energy dependence of v_2 for identified hadrons from Au+Au collisions for energy ranging from 200 GeV to 5 GeV. Data from transport models are used in our analysis. Without the partonic coalescence, the scaling is absent.

[1] J. Adams, *et al.*, (STAR Collaboration), Nucl. Phys. **A757**, 102(2005).

[2] B.I. Abelev, *et al.*, (STAR Collaboration), Phys. Rev. Lett. **99**, 112301(2007).

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