

Abstract Submitted
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Source anisotropy in non-central heavy ion collisions in the RHIC energy scan - model expectations MICHAEL LISA, ELLIOT MOUNT, Ohio State University — The beam energy scan program at RHIC aims to identify non-trivial structure (phase boundaries, critical points) in the phase diagram of strongly-interacting matter. There may be corresponding features in the QCD Equation of State (e.g. “soft spots”) which affect the dynamic evolution of the system, generating observables that vary non-trivially with the collision energy. We focus on the freezeout spatial anisotropy of the source created in non-central heavy ion collisions; this anisotropy is estimated from the azimuthal dependence of HBT radii from two-pion correlations [1]. While measurements of this anisotropy have been made at only a few energies, an intriguing and unexplained non-monotonic behaviour has been noted [2]. Using several transport model calculations, we will discuss the effect of the Equation of State and timescales on the freezeout anisotropy. Important technical aspects of model-to-data comparisons will be discussed. This will provide important context on the data available thus far, as well as newly emerging results from the beam energy scan by STAR Collaboration.

[1] Retiere and Lisa, Phys. Rev. **C70** 044907 (2004); nucl-th/0312024

[2] Lisa and Pratt, arXiv:0811.1352

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