

Abstract Submitted
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Directed flow of particles and quarks from the RHIC Beam Energy Scan measured by STAR PRASHANTH SHANMUGANATHAN, Lehigh University, STAR COLLABORATION — The Beam Energy Scan (BES) program at the Relativistic Heavy Ion Collider aims to study the QCD phase diagram in a region where a critical point may exist. Possible signatures of a softening of the QCD equation of state have been reported at BES energies, and directed flow (rapidity-odd $v_1(y)$) is has been measured by STAR indicating an intriguing double sign change behavior. This talk will focus on v_1 and its slope, dv_1/dy , near midrapidity for ten identified particles in Au+Au collisions at eight beam energies measured by the STAR experiment. The coalescence assumption is used to interpret v_1 versus beam energy of the constituent quarks, which explores the separate contributions from quarks produced in the collision, and transported from the colliding nuclei. Tests of a coalescence sum rule are carried out for net particles, and implications for transported quark v_1 are also discussed. We will also discuss the detector upgrades and expected improvements in v_1 measurements from phase II of the of the Beam Energy Scan program.

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