

Recent Results and Future Prospects from the STAR Beam Energy Scan Program

Zachary Sweger
(For the STAR Collaboration)

University of California, Davis
zwsweger@ucdavis.edu

Abstract

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2 The STAR experiment at Brookhaven National Laboratory has completed the second phase
3 of the beam energy scan (BES-II) program, including fixed-target (FXT) mode, aimed at
4 collecting high-statistics data on Au+Au collisions in the high baryon-density region of the
5 QCD phase diagram. Together the FXT and collider data cover center-of-mass energies from
6 $\sqrt{s_{NN}} = 3.0$ GeV to $\sqrt{s_{NN}} = 54.4$ GeV. Recent results from these data will be presented,
7 including hypernuclei production, elliptic flow, baryon stopping, and proton fluctuations. Ad-
8 ditionally, anticipated analyses will be discussed as well as their implications for mapping the
9 QCD phase diagram and its critical point.