

New STAR results from the RHIC Beam Energy Scan II program

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The understanding of the QCD phase structure at finite baryon densities and the nature of the phase transition from the hadronic to the Quark-Gluon Plasma phase dominated by partonic degrees of freedom depends crucially on experimental measurements. The ongoing second phase of the Beam Energy Scan program at RHIC (BES-II) focuses on exploring the high baryon density region of the QCD phase space with high precision measurements. The STAR experiment at RHIC has implemented several detector upgrades for BES-II including upgrades for the Time Projection Chamber (TPC), a new Event Plane Detector (EPD) and the end-cap Time Of Flight detector, that will enhance the kinematic reach and statistical precision of measurements. The BES-II also includes a fixed target (FXT) program that extends the nucleon-nucleon center of mass energy of collisions down to 3 GeV. In this talk we will present the latest results from the BES-II program at STAR including new results of identified hadron production, collectivity, and criticality in $\sqrt{s_{NN}} = 3 - 20$ GeV Au+Au collisions at RHIC. Physics implications of these new results will also be discussed.