

Abstract Submitted
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Measurements of di-hadron correlations and azimuthal anisotropies in the BES at RHIC by STAR LIAO SONG, Univ of Houston, STAR COLLABORATION — The Beam Energy Scan (BES) program at the Relativistic Heavy Ion Collider (RHIC) aims to vary the temperature and baryon-chemical potential of the medium formed from heavy-ion collisions, by colliding Au nuclei at energies from 7.7 GeV to 200 GeV (center of mass energy per nucleon). In doing so, it hopes to create a map of the Quantum ChromoDynamical (QCD) phase diagram of nuclear matter, and determine at which temperature Quark Gluon Plasma (QGP) formation occurs. Spatial inhomogeneities in the initial state of the collision can create pressure gradients in the QGP, which induce anisotropies among produced particles, known as azimuthal anisotropy. These anisotropies manifest themselves as the ridge in di-hadron correlations, which has been extensively studied at the top the RHIC energies and the LHC. We will present some preliminary measurements of di-hadron correlations from $\sqrt{s_{NN}} = 7.7, 11.5, 19.6, 27$ and 39 GeV BES data, and the azimuthal anisotropy parameters $v_2\{2\}$ and $v_3\{2\}$ obtained from the $\Delta\eta\Delta\phi$ correlation function, and compare with previous STAR results at top (or higher) RHIC energies. We will also look at the $\Delta\eta$ gap dependence and the energy dependence of these anisotropy parameters.

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