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STAR Au + Au Fixed Target Results

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The RHIC Beam Energy Scan (BES) program was proposed to look for the turn-off of signatures of the quark gluon plasma (QGP), search for a possible QCD critical point, and study the nature of the phase transition between hadronic and partonic matter. The results from the NA49 experiment at CERN have been used to claim that the onset of deconfinement occurs at a collision energy around a center-of-mass energy of 7 GeV, the low end of the BES range [1]. Data from lower energies are needed to test if this onset occurs. The goal of the STAR Fixed-Target Program is to extend the collision energy range in BES II with the same detector to energies that are likely below the onset of deconfinement. Currently, STAR has inserted a gold target into the beam pipe and conducted test runs at center-of-mass energies 3.9 and 4.5 GeV. Tests have been done with both Au and Al beams. First physics results from a Coulomb analysis of Au + Au fixed-target collisions, which are found to be consistent with previous experiments, will be presented. These results demonstrate that STAR has good particle identification capabilities in this novel detector setup. Furthermore, the Coulomb potential, which is sensitive to the Z of the projectile and degree of baryonic stopping, will be compared with published results from the AGS. Additional results and comparisons will be presented if available.

[1] Xi (Omega) production in Pb+Pb Collisions at 158 GeV/c, G. Odyniec for the NA49 Collaboration, J. Phys. G, 23, 1827 (1997)

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