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## Baryon Stopping and Associated Production of Mesons in Au+Au Collisions at $\sqrt{s_{NN}} = 3.0$ GeV at STAR

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Charged particles in heavy-ion collisions have various production mechanisms, such as thermal and associated production, and the importance of each changes with the collision energy. Studying the yields of charged particles provides a way to investigate the properties of the produced QCD matter in heavy-ion collisions and the various production mechanisms. The RHIC Beam Energy Scan (BES) programs cover a wide range of energies, including the transition from a hadronic dominated medium to a partonic dominated medium. The recently completed BES-II program was designed to improve and extend upon the results from the BES-I program. Of particular interest is the high baryon density region which is accessible through the STAR fixed-target program, extending the energy reach from  $\sqrt{s_{NN}} = 7.7$  GeV down to  $\sqrt{s_{NN}} = 3.0$  GeV. This presentation reports on measurements of charged particle production in Au+Au collisions at  $\sqrt{s_{NN}} = 3.0$  GeV. Measurements of the proton stopping will be presented in addition to measurements of the production of  $K^+$  in association with the  $\Lambda$  baryon. Invariant yields and rapidity density distributions of  $\pi^\pm$ ,  $K^\pm$ , and  $p$  will also be presented, which will help to unravel the relative importance of the different particle production mechanisms. These measurements provide an in-depth study of the various production mechanisms for light hadrons and probe unique properties of the high baryon density medium produced in these low energy collisions.

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