

id: 0ftvkahanwve29n86loico8

title: QNP 2022 Abstract

desc: "

updated: 1661450306436

created: 1661449890085

The STAR Forward Upgrade

The STAR Collaboration has successfully completed an upgrade consisting of forward detector systems located between $2.5 < \eta < 4.0$. This upgrade comprises a Forward Calorimeter System, containing an Electromagnetic Calorimeter and a Hadronic Calorimeter, and a Forward Tracking System, consisting of a Forward Silicon Tracker and Forward small-strip Thin Gap Chambers. The forward detector upgrade has excellent detection capability for neutral pions, photons, electrons, jets, and charged hadrons. A combination of soft and hard probes collected during 2023-25 will be used to probe the QGP's microstructure and will enable a unique forward physics program via the collection of high statistics Au+Au, p+Au, and p+p data at $\sqrt{s_{NN}} = 200$ GeV. With the extended acceptance and the enhanced statistics, STAR will be positioned to perform correlation studies in heavy-ion collisions, e.g., the pseudorapidity dependence of azimuthal correlations and the pseudorapidity dependence of global hyperon polarization. The STAR forward detector upgrade will also enable an extensive suite of measurements probing the quark-gluon structure of heavy nuclei. In this talk, we will present the current status of the forward detector system and discuss its performance during data taking with cosmic ray and p+p collisions at $\sqrt{s_{NN}} = 510$ GeV during the 2022 RHIC run.