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STAR Forward Detector Upgrade Status and Performance

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An upgrade to the STAR detector system at forward rapidities has been completed before RHIC RUN 2022 and used for data collection. It consists of the Forward Tracking System (FTS) and the Forward Calorimeter System (FCS). The Forward Tracking System is composed of a Silicon Tracker and a small-strip Thin Gap Chamber Tracker. The Forward Calorimeter System contains an Electromagnetic Calorimeter and a Hadronic Calorimeter. The systems cover the pseudorapidity region of 2.5-4, providing detection capabilities for neutral pions, photons, electrons, jets, and charged hadrons. This enables the STAR experiment to study cold QCD physics in very high and low regions of Bjorken x and to explore the longitudinal structure of the initial state in relativistic heavy-ion collisions, such as measuring the decorrelations in a large η . This talk will introduce the STAR forward upgrade, its current status, and its performance during the STAR Run22.

Category

Experiment

Collaboration (if applicable)

STAR Collaboration

Primary author: WANG, Zhen

Presenter: WANG, Zhen

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