R&D for the Forward Silicon Tracker at STAR

Te-Chuan Huang* (for the STAR Collaboration)

*National Cheng Kung University

Abstract

The STAR experiment at the Relativistic Heavy Ion Collider is planning to extend its capability to the forward pseudorapidity region ($2.5 < \eta < 4$). A set of detector upgrades, including ~~the~~ silicon tracker and small thin gap chambers as the Forward Tracking System (FTS), ~~the~~ electromagnetic and hadronic calorimeter as the Forward Calorimeter System (FCS), ~~plans to be designed,~~ constructed and installed after the phase II of the Beam Energy Scan program. These upgrades will help STAR to address some open questions in QCD physics, ~~for examples,~~ nucleon spin structure, parton saturation, and transport properties of matter in relativistic heavy ion collisions.

In this presentation, I will focus on the hardware R&D of the silicon tracker in the FTS, as well as ~~the performance of tracking in simulation studies.~~.