

The intermediate tracking system of the sPHENIX detector at RHIC

The sPHENIX experiment at the Relativistic Heavy Ion Collider at Brookhaven National Laboratory is designed to explore a vast range of physics areas including heavy quarkonia suppression via the three Y states and tagging of charm and beauty jets. Among the sPHENIX detector systems, precision tracking inside the 1.5 Tesla BaBar superconducting solenoid plays a crucial role to reduce fake track contributions and improve the momentum resolution, thus leading to separation of the three Y states and to separation of charm and bottom quarks. A charged particle tracking system employing an "Intermediate Tracker", consisting of four layers of the silicon strip detectors placed circumferentially in the radial space from 6–12 cm, will satisfy the above requirements. In this talk, we will discuss the design and technology choices for the sPHENIX intermediate tracking system, the latest status of the prototype detector R&D, and the expected performance based on full Geant4 simulations.

Preferred Track

Future Experimental Facilities, Upgrades, and Instrumentation

Collaboration

sPHENIX

Primary author: MITSUKA, Gaku

Presenter: MITSUKA, Gaku

Session Classification: Poster Session