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The status of sPHENIX experiment at RHIC

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sPHENIX started running in Spring 2023 at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. It performs unprecedentedly high-precision measurements in 200 GeV p+p and Au+Au collisions. Built around the excellent BaBar superconducting solenoid, the central detector consists of a silicon pixel vertexer adapted from the ALICE ITS-2 inner barrel design, a silicon strip detector with single event timing resolution, a compact TPC, a novel EM calorimetry, and layers of hadronic calorimetry located inside and outside of the magnet to measure the full jet energy. The plan is to use the combination of electromagnetic calorimetry, hermetic hadronic calorimetry, precision tracking, and the ability to record data at high rates without trigger bias to make precision measurements of Heavy Flavor and jets to probe the Quark Gluon Plasma (QGP) formed in heavy ion collisions. These measurements will have a kinematic reach that not only overlaps those performed at the LHC, but extends them into a new, low-pT regime. In the 2024 run, sPHENIX has completed full commissioning, collecting 100 billion unbiased p+p collisions and 107/pb sampled with rare triggers for physics measurements, as well as a small commissioning Au+Au dataset in anticipation of high-luminosity Au+Au running in Run-25. The sPHENIX physics program, its potential impact, and its recent run status will be discussed in this talk.

Primary author: Dr MA, Weihu (复旦大学)

Presenter: Dr MA, Weihu (复旦大学)

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