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The sPHENIX experiment at RHIC

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The sPHENIX detector at the BNL Relativistic Heavy Ion Collider (RHIC) is currently under construction and on schedule for first data in early 2023. Built around the BaBar superconducting solenoid, the central detector consists of a silicon pixel vertexer, a silicon strip detector with single event timing resolution, a compact TPC, novel EM calorimetry, and two layers of hadronic calorimetry. 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, Upsilon and jets to probe of 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- p_T regime. sPHENIX will significantly expand the observables and kinematic reach of these measurements at RHIC and provide a comparison with the LHC measurements in the overlapping kinematic region. The physics program, its potential impact, and recent detector development will be discussed in this talk.

In-person participation

No

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