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Heavy flavor physics with the sPHENIX MAPS vertex tracker upgrade

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The sPHENIX detector at BNL's Relativistic Heavy Ion Collider (RHIC) will measure a suite of unique jet and Upsilon observables with unprecedented statistics and kinematic reach at RHIC energies. A MAPS-based vertex detector upgrade to sPHENIX, the MVTX, will provide a precise determination of the impact parameter of tracks relative to the primary vertex in high multiplicity heavy ion collisions. The MVTX utilizes the latest generation of MAPS technology to provide precision tracking with high tracking efficiency over a broad momentum range in the high luminosity RHIC environment. These new capabilities will enable precision measurements of open heavy flavor observables, covering an unexplored kinematic regime at RHIC. The physics program, its potential impact, and recent detector development of the MVTX will be discussed in this talk.

Collaboration (if applicable)

sPHENIX

Track

Heavy Flavor and Quarkonia

Contribution type

Contributed Talk

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