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## Vertex Determination in sPHENIX

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The open heavy flavor program of the sPHENIX experiment at RHIC requires precise determination of the location of individual tracks in the region around the interaction vertex. Three layers of MAPS based pixels (the MVTX) surrounding the beam line are designed to provide a precision of about 10  $\mu\text{m}$  for higher momentum tracks. The tracking system also contains two layers of silicon strip detectors (the INTT) for pattern recognition, and a time-projection chamber (TPC) for momentum measurement. The corresponding beam crossing for each track is determined from the precise timing of the INTT detector. In addition to measuring the track momentum, the physics program requires determining the event vertex, finding the displacement of individual tracks from the event vertex, and locating and reconstructing decays of neutral particles that occur before the radius of the silicon pixel detectors. This poster describes the vertex determination process. The sPHENIX detector is taking data for the first time during the 2023 RHIC run, and the status of the vertex determination at the time of the conference will be discussed.

### Category

Experiment

### Collaboration (if applicable)

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**Session Classification:** Poster Session

**Track Classification:** Future facilities/detectors