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sPHENIX MVTX Quality Control and Online System

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sPHENIX is a state-of-the-art detector for jet and heavy flavor physics in heavy-ion collisions and going to take data at RHIC in 2023. The sPHENIX MVTX detector has excellent position resolution and vertexing capabilities, which is crucial for heavy flavor physics studies. A dedicated online software system, including the quality control and detector slow control system, is being developed. The quality control system will analyze and display the performance of MVTX in real time for online monitoring. The analysis results will be stored in the database to be retrieved later and studied over a period of time. The detector slow control system is based on WinCC. Shifters can use it to operate the MVTX detector according to real time feedback from the quality control system to maintain the functionality and safety of MVTX. The online system will be used in MVTX commissioning and in the runs to ensure high quality data taking. In this poster, the design and framework of the online system will be discussed. We will also present the general interface and selected hit, cluster, and tracking performance plots from recent Fermilab test beam data and Monte Carlo simulations.

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