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Performance and Running Experience of the Belle II Silicon Vertex Detector

Friday, May 28, 2021 5:50 AM (20 minutes)

The Belle II experiment is collecting data at the SuperKEKB collider (KEK, Japan), which aims to provide 50 ab-1 integrated luminosity with the unprecedented peak-luminosity of 6 × 10ˆ35 cm-2s-1.
The challenge for the Belle II detector is the harsh beam background due to the high luminosity beams. The silicon vertex detector (SVD) is one of the vertex detectors in Belle II, consisting of four-layer double-sided silicon strip sensors. The SVD is operating reliably since 2019, showing high stability of the noise levels and calibration parameters. The measured performance includes excellent signal-to-noise ratio and hit efficiency, as well as hit-time and spatial resolution. Radiation effects on strip noise, sensor currents and depletion voltage are also measured, which reasonably match expectations based on the preliminary radiation dose evaluated by diamond sensors.
In this talk the performance of the SVD, as well as the operational experience and radiation effects, will be presented.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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