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Performance and Running Experience of the Belle II Silicon Vertex Detector

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In spring 2019 the Belle II experiment started data taking at the energy of the Y(4S) resonance. The SuperKEKB collider of KEK (Japan) aims to provide 50 ab-1 of e+e− collision events at the unprecedented luminosity of 8 10ˆ35 cm-2 s-1.
The challenge for the Belle II detector is to record high-quality data in the new high-luminosity environment, characterized by increased backgrounds.
The new vertex detector consists of two inner layers of DEPFET-based pixels (PXD) and four layers of double-sided silicon strip detectors (SVD).
The SVD was operated reliably during the 2019 physics run, showing high stability of the noise levels and calibration parameters. The SVD performance was measured with first data, showing excellent hit and tracking efficiency, high signal-to-noise ratio. Detailed studies of the good spatial resolution achieved will be shown. The excellent hit-time resolution will be exploited for background rejection in the coming years of running at higher luminosity.

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