

Re-installation and performance of the Belle II Silicon Vertex Detector

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At the beginning of 2024 data taking of the Belle II experiment resumed after the Long Shutdown 1, primarily required to install a new two-layer DEPFET detector (PXD) and upgrade accelerator components. The whole silicon tracker (VXD) was extracted, the two halves of the outer strip detector (SVD) were split for the PXD insertion and reconnected again. The new VXD was commissioned for the start of the new run.

We will describe the challenges of this VXD upgrade and report on the operational experience and the SVD performance obtained with this first-year data. We then introduce the various improvements in the reconstruction procedure, that exploit the excellent SVD hit-time resolution to enhance beam-induced background rejection and reduce track fake-rate, crucial aspects for the higher luminosity regime.

Alternate track

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Yes

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