

Commissioning of the Belle II Silicon Vertex Detector

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The Belle II experiment at the SuperKEKB collider of KEK (Japan) will accumulate e^+e^- collision data at an unprecedented instantaneous luminosity of $8 \times 10^{35} \text{ cm}^{-2}\text{s}^{-1}$, about 40 times larger than its predecessor experiment. The Belle II vertex detector consists of two layers of DEPFET based pixels (PXD) and four layers of double sided silicon strip detectors (SVD). The SVD sensors are assembled into oblong modules called the ladders, which are arranged cylindrically around the beam direction. Most of the ladders have a kinked shape giving the SVD its characteristic lantern structure.

From April to July 2018 a reduced scale version of the SVD was installed in Belle II and has collected e^+e^- collision data during an initial commissioning run of SuperKEKB. From July to September 2018 the completed SVD was operated outside of the experiment and cosmic ray muon data has been accumulated. The full vertex detector, SVD with the pixel detector, will be finally installed in Belle II by the end of this year and SuperKEKB operation with the full experiment in place will restart in spring 2019. In this talk we summarize the studies performed with the first data sets and the results obtained on the performance of the device.

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