



Contribution ID: 19

Type: **invited talk**

The Belle II Pixel Detector

The DEPFET collaboration develops highly granular, ultra-transparent active pixel detectors for high-performance vertex reconstruction at the Belle II experiment, KEK, Japan. The key features of the DEPFET sensors have been proven: in-pixel amplification, high signal-to-noise ratio, non-destructive pulse height readout, integration of the readout ASICs on the All-Silicon module. The vertex pixel detector (PXD) will consist of two DEPFET layers at radii of 14 mm and 22 mm providing close to 8M pixels which will be read out within 20 μ s. A complete detector concept including mechanical support, cooling and services was developed and tested together with four layers of the silicon strip detector (SVD) during a beam test in spring 2016 at DESY. After a brief introduction to the Belle II experiment, the Pixel Detector PXD and the DEPFET sensor concept, this contribution will present measurements of PXD pilot modules including the functionality of an electronic shutter which allows to shield the sensor during beam injection. Finally an overview of the PXD production, QA tests and integration plan will be provided.

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