

8th Beam Telescopes and Test Beams Workshop



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Testbeam Experience with Belle II PXD Modules

The Belle II experiment started taking data at the SuperKEKB electron-positron collider in spring 2019. The central part of the Belle II detector is a silicon vertex detector comprised of 4 double-sided strip and 2 PiXel Detector (PXD) layers.

The layout of the PXD consists of large ($\sim 8 \times 1.5$ cm) ultra-low material budget all-silicon modules with DEPFET (DEpleted P-channel Field Effect Transistor) sensor matrices of 75 μ m thickness. This sensor technology is employed for the first time in a high energy experiment.

Several final version modules were characterized at the DESY test beam facility in 2018 and 2019. Measurements were conducted with the AIDA beam telescope and the EUDAQ 1 framework and the data were analyzed with the TBSW software. An overview of the experimental setup and analysis techniques will be given and the results of efficiency and resolution measurements presented.

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