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Hybrid Pixels for the PANDA Micro-Vertex Detector

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PANDA is a fixed target experiment that will be carried out at the future FAIR facility.
The PANDA experiment will perform precise studies of antiproton-proton annihilations and reactions of antiprotons
with nucleons of heavier nuclear targets, allowing to investigate different physics topics.
The Micro-Vertex-Detector (MVD), which represents the innermost part of the central tracking system, features good spatial resolution, limited material budget, radiation hardness and PID capability.
To cope to this requirements the MVD is composed by pixel and strip detectors.
The custom pixel detector design foresees thin epitaxial sensors and a readout electronics developed in 130nm CMOS technology able to work in a triggerless environment. The first single chip assembly prototype for the pixel detector of PANDA is composed of the ToPix3 readout chip and a dedicated epitaxial silicon sensor matching in size the 640 readout channel matrix of the ASIC prototype. The bump bonding connection was done by IZM company.
To perform the first beam test, a pixel tracking station composed by 4 planes was assembled and tested with 2.7 GeV/c protons at Forschungszentrum Julich.
The data analysis will be presented.

Si richiede un contributo spese? (solo per dottorandi)

no

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