

Passive CMOS Strip Sensors –characterisation, simulation and test beam results

Saturday 20 July 2024 08:47 (17 minutes)

In the passive CMOS Strips Project, strip sensors were designed by a collaboration of German institutes and produced at LFoundry in 150 nm technology. Up to five individual reticules were connected by stitching at the foundry in order to obtain the typical strip lengths required for the LHC Phase-II upgrade of ATLAS or CMS trackers. The sensors were tested in a probe station and characterised with a Sr90-source as well as laser-based edge- and top-TCT systems. At last, detector modules were constructed from several sensors and thoroughly studied in a test beam campaign at DESY. All of these measurements were performed before and after irradiation. Sensors were also simulated using Sentaurus TCAD and the charge collection characteristics were studied using Allpix². This presentation will provide an overview of simulation results, summarize the laboratory measurements and present the test beam results for irradiated and unirradiated passive CMOS strip sensors.

Alternate track

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Session Classification: Detectors for Future Facilities, R&D, Novel Techniques

Track Classification: 13. Detectors for Future Facilities, R&D, Novel Techniques