

# 12th Beam Telescopes and Test Beams Workshop



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## Test Beam Characterisation of stitched CMOS Strip Sensors

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In high-energy physics, there is a need to investigate silicon sensor concepts that offer large-area coverage and cost-efficiency.

Sensors based on CMOS imaging technologies present an alternative silicon sensor concept for particle tracking detectors.

As this technology is a standardised industry process, it can provide a lower sensor production cost and access to fast and large-scale production from various vendors.

The CMOS Strips project is investigating passive CMOS strip sensors fabricated by LFoundry in a 150 nm technology.

By employing the technique of stitching, two different strip formats of the sensor have been realised.

The implant design varies in doping concentration and width of the strip implant, making it possible to study various depletion concepts and electric field configurations.

The sensor performance is evaluated based on several test beam campaigns conducted at the DESY II test beam facility. In addition, the strip sensors have been electrically characterised in the laboratory.

This contribution presents detailed test beam data analysis results for different sensor layouts, focusing on the signal distribution, spatial resolution and hit detection efficiency.

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