



Contribution ID: 9

Type: **Poster (short oral)**

[B13] Beam test studies of bent MAPS for ALICE ITS3

Tuesday 25 October 2022 11:05 (15 minutes)

Bent Monolithic Active Pixel Sensors (MAPS) provide the basis for the next generation of ultra low material budget, fully cylindrical tracking detectors. In this contribution, results of beam campaigns with 5.4 GeV electrons will be presented. They verify the performance of bent 50 μm thick ALPIDE chips in terms of efficiency and space point resolution after bending them to the ALICE ITS3 radii of 18, 24, and 30 mm. In particular, an efficiency larger than 99.9% and a space-point resolution of approximately 5 μm are observed, both in line with the nominal operation of flat ALPIDE sensors.

These values are found to be independent of the bending radius and thus demonstrate the feasibility of the planned ITS3 detector in crucial aspects.

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Session Classification: Upgrade