

## 28th RD50 Workshop (Torino)



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### Test beam and clean room studies of ATLAS PPS modules with alternative bias rail geometries

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It is known that for the current design of planar pixel sensors, there is a drop of efficiency at the punch-through structure of the biasing system at the edge of pixels. Various geometries, as part of the ATLAS Inner Tracker (ITK) upgrade, are being investigated to reduce this inefficiency.

Planar pixel sensors with multiple alternative bias rail geometries have been tested at the SPS beam test facility at CERN, with results focusing on the efficiency within the pixel. Measurements of the pixel detectors in a clean room before and after irradiation were performed to study the noise for the varied designs. Some sensors after irradiation experienced disconnected bump-bonds. Studies into the origin of this will be presented. Future plans for further investigations are also discussed.

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