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Recent test beams results of ATLAS ITk pixel modules

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The ATLAS inner detector will be completely replaced to cope with the increased occupancy, bandwidth and radiation damage that will be posed by the High Luminosity phase of the Large Hadron Collider. The new all-silicon Inner Tracker (ITk) will be equipped with pixel detectors in the innermost part, using several silicon sensor technologies equipped with novel ASICs connected by bump-bonding technique.

n-in-p planar hybrid modules 100 μm and 150 μm thick will instrument the four outer layers of the pixel detector. Due to their radiation hardness, 3D sensors will be installed in the innermost layer, where a fluence up to 2×10^{16} neq/cm² is expected. Their production is distributed among different vendors, and the pre-production sensors from each vendor are progressively being tested before and after irradiation with test beams. The most recent results will be presented.

Auteurs principaux: RESEGOTTI, Martina (INFN, Genoa); SAMY, Md Arif Abdulla (University of Glasgow)

Orateur: SAMY, Md Arif Abdulla (University of Glasgow)

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