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Planar Pixel Sensors for the ATLAS Upgrade: Beam Tests results

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Results of beam tests with planar silicon pixel sensors aimed towards the ATLAS Insertable B-Layer and High Luminosity LHC (HL-LHC) upgrades are presented. Measurements include spatial resolution, charge collection performance and charge sharing between neighbouring cells as a function of

track incidence angle for different bulk materials. Measurements of n-in-n pixel sensors are presented as a function of fluence for different irradiations. Furthermore p-type silicon sensors from several vendors with slightly differing layouts were tested. All tested sensors were connected by bump-bonding to the ATLAS Pixel read-out chip. We show that both n-type and p-type tested planar sensors are able to collect significant charge even after integrated fluences expected at HL-LHC.

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