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Comparison of the performance of irradiated n-in-p planar pixel sensors of different active thickness

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We present the results of the post-irradiation characterization of n-in-p pixels produced at CiS and at the Semiconductor Laboratory of Max-Planck-Institut. N-in-p pixels represent a cost-effective alternative to the n-in-n technology to instrument the outer layers of the new pixel systems at HL-LHC. The performance of this kind of detectors will be shown up to fluence of 1e16 neq/cm**2, in terms of charge collection efficiency (CCE), noise occupancy and tracking efficiency obtained in beam tests. A comparison of the CCE for n-in-p pixels of active thickness between 75 um and 300 um will be shown.
A proposal for a new production at CiS of n-in-p pixels and diodes, as a common RD50 project will be also presented.

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