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Status of the n-in-n CiS pixel production

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Within the framework of RD50 and the ATLAS Upgrade Planar Pixel Sensor R&D Project (PPS), n-in-n sensors have been produced on n-bulk 4" DOFZ and MCz wafers. The structures on the wafer are mainly dedicated to the investigation of charge amplification effects and of reduction options for inactive edges. The latter will be important for future pixel detectors at small radii such as the ATLAS insertable b-layer (IBL).
Besides different diodes and test structures with segmented implants, pixel sensors matching the current and future ATLAS FE chips (FE-I3 and FE-I4) have been manufactured with several options.

We will present the wafer layout and role of the different sensor options and characterization results before and after UBM application on wafer level. Results from singularized structures of the first 6 diced wafers will be shown both after standard dicing and partially after slim-edge dicing with only 100-200 um safety margin.

Finally, we will outline an irradiation plan for sensors and sensor-FE-chip-assemblies including mixed irradiations to emulate the fluence at intermediate radii for trackers at SLHC experiments.

Author: Mr RUMMLER, André (TU Dortmund)

Presenter: Mr RUMMLER, André (TU Dortmund)

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