

Characterization and test beam studies for FE-I3 planar n-in-p and 3D double-sided pixel sensors for the ATLAS upgrade

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Solid state detectors provide very high precision tracking in particle physics experiments. However, their tracking performance start to degrade at fluxes of radiation around $\sim 10^{14}$ - 10^{15} hadrons/cm². Research on new radiation-hard pixel sensor technologies is being done at IFAE, in collaboration with CNM. Results of the characterisation and beam test studies of n-in-p planar and 3D double sided devices bump bonded to the current ATLAS pixel front-end chip (FE-I3) will be presented. An overview of this work is given in this talk.

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