

Lab measurements and testbeam results of irradiated $n \times n$ planar pixel sensors for IBL and beyond

Wednesday 25 May 2011 09:00 (20 minutes)

We have irradiated $n \times n$ sensor assemblies based on the current ATLAS readout chip FE-I3 up to the required IBL end of life fluence $5 \times 10^{15} \text{ n/cm}^2$ (and further up to $2 \times 10^{16} \text{ n/cm}^2$ for HLLHC) using thermal neutrons in Ljubljana as well as low energy protons in Karlsruhe. Promising results, particularly hit efficiencies, from the analysis of testbeam data will be shown. Furthermore an update on the overall charge collection gained from lab measurements will be presented. An outlook on first results obtained in the lab with similarly irradiated FE-I4 based SingleChip assemblies and their general behaviour will be given as well.

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