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Edge-TCT studies of irradiated HV-CMOS sensors and first test beam results with monolithic H35demo chips

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The H35Demo is a large area High-Voltage CMOS demonstrator chip for tracking at LHC experiments. It is produced at the AMS foundry in 0.35 µm technology on wafers with resistivity ranging from 20 to 1000 Ohm cm.
Each chip includes two monolithic matrices using nMOS or CMOS transistors and 3x3 pixel test structures without electronics for sensor characterisations. H35demo samples of different resistivities have been irradiated with neutrons at the TRIGA reactor in Ljubljana up to a fluence of 2e15 neq/cm2. The depletion depth of the test structures was measured with the edge-TCT technique after each irradiation step. Results of the TCT measurements together with the very first test beam results of the monolithic CMOS matrices before irradiation will be presented.

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