

Characterization of depleted monolithic active pixel sensors in 180 nm TowerJazz technology

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The high-luminosity upgrade of the LHC (HL-LHC) leads to new requirements on the detectors. With the availability of highly resistive silicon from commercial CMOS vendors, there are ongoing efforts to build depleted monolithic active pixel sensors (DMAPS) for high energy particle detectors. TJ-Monopix is a family of such a pixel sensor in 180 nm TowerJazz technology implementing a small collection electrode design. It is designed for usage in high-radiation environments such as the HL-LHC. The pixels with a size in the order of 30 μm to 40 μm are read out using a column-drain readout architecture.

In this talk, results from the first iteration, TJ-Monopix1, will be shown as well as an overview of the design and first measurements with TJ-Monopix2.

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