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Testbeam Characterization of the ATLASpax_Simple Pixel Sensor Prototype in View of the Requirements for the CLIC Tracking Detector

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The ATLASpax_Simple is a Monolithic Active Pixel Sensor prototype produced in a commercial 180nm HV-CMOS process. It contains a self-triggered 25 x 400 pixel array with a pixel size of 130 μm x 40 μm . The chip features tunable in-pixel comparators and a digital periphery allowing for on-chip hit digitization.

In order to characterize the chip and investigate its performance with respect to efficiency, timing and spatial resolution, testbeam campaigns are carried out in which the prototype is placed in a beam telescope consisting of multiple layers of pixel sensors. The beam telescope provides reference tracks to which the hits on the device-under-test can be compared with a high spatial and time resolution.

This talk will introduce the ATLASpax sensor prototype. Furthermore, results from the testbeam performed with the CLICdp Timepix3 Beam Telescope at the H6 beamline of the SPS in November 2018 will be presented in view of the requirements of the CLIC tracking detector.

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