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The MALTA telescope: simulation and comparison with data

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MALTA is a monolithic active pixel sensor intended for implementation in the outer layers of the ATLAS pixel detector during the Phase-II upgrade. Monolithic active pixels produced in commercial CMOS technology have a number of advantages over hybrids sensors currently being used, including: improved granularity, lower material budget, lower power dissipation, and lower financial cost. The chip based on the ALPIDE chip, which is to be implemented in the ALICE experiment during the 2019-2020 long shutdown of the LHC.

We are developing a telescope consisting of six MALTA planes for test beam experiments. In this contribution, we show recent results from test beams at SPS and comparisons to AllPix simulations. In both we measure a spatial resolution near 4 μ m. We also include results for 3GeV and 5GeV electrons in anticipation of test beams at DESY in 2019.

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