

# Integration of high temporal resolution planes into AIDA-type telescopes for Sensor Characterization

*Friday 21 June 2024 10:00 (20 minutes)*

AIDA telescopes are systematically employed for sensor characterization, particularly in high-energy particle physics. With their exceptionally high spatial resolution, on the order of a few microns, they serve as suitable instruments for characterizing pixelated sensors in high-energy experiments, involving the extraction of detection efficiencies, spatial resolution, and more. However, these telescopes lack any plane capable of temporal resolution. Introducing the ETROC2 chip, a 16x16 pixel matrix ASIC capable of resolving temporal distances on the order of tens of picoseconds, offers a solution. The final version of this ASIC, currently in R&D, aims to be incorporated into the future MIP Timing Detector of the CMS upgrade for the HL-LHC. We have utilized the ETROC2 mounted on LGAD sensors to construct a detection plane integrated into the AIDA telescope, enabling the characterization of sensors not only with high spatial resolution but also with high temporal resolution. In this contribution, we will explain the integration process of this spatial plane into the infrastructure of AIDA telescopes and describe the main features of this chip.

## **Type of presentation (in-person/online)**

online presentation (zoom)

## **Type of presentation (scientific results or project proposal)**

Presentation on scientific results

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