Medipix beam test

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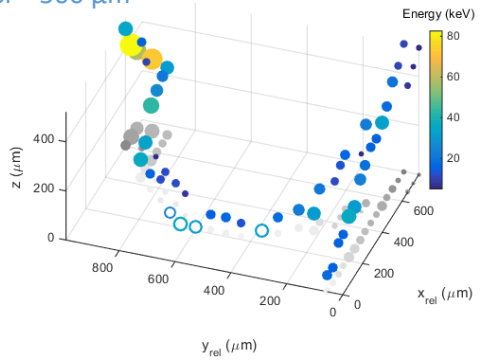
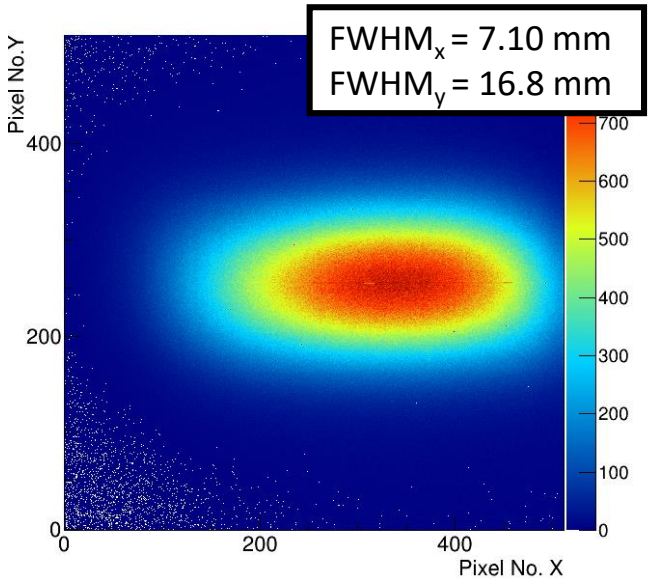
Motivation - Addressed detector development

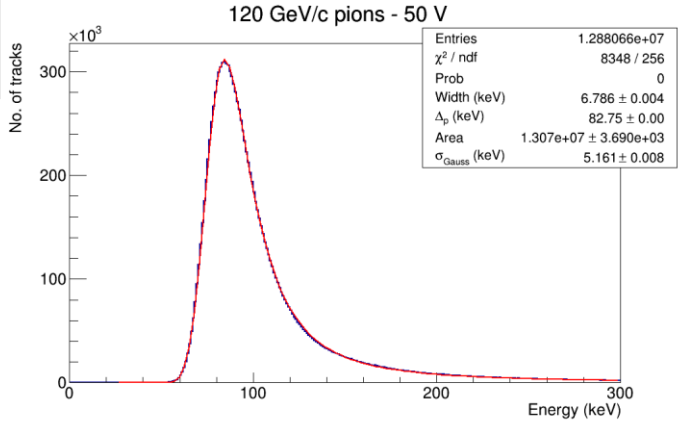
- Characterization of different sensor materials (3D, GaAs:Cr, CZT, ...)
- Test of Timepix2/3 based detector for space application
- Timepix4 R/O system
- Characterization of the response of ATLAS-Timepix3
- Test of software for real-time analysis and data compression

Timepix3 for single-layer particle tracking

Si – 500 µm



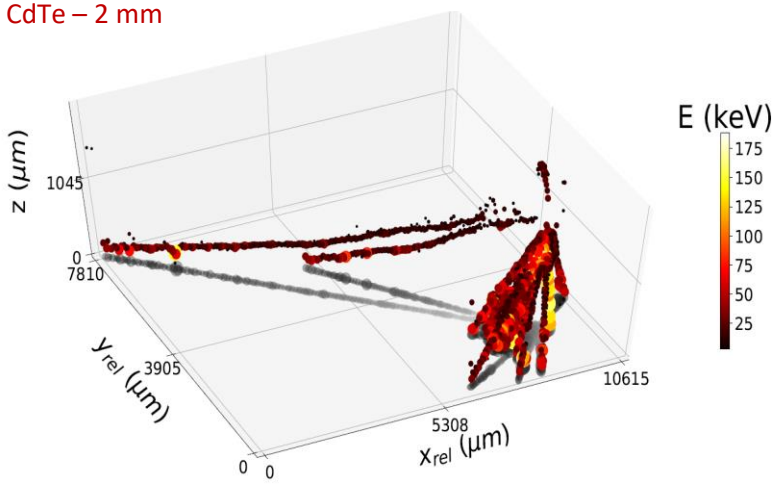




Beam spot and stopping power measurement with Timepix3 Quad (September 2021)

Event characterization using Timepix3 as solid-state TPC

CdTe – 2 mm



Beam and infrastructure requirements

Beam requirements:

- Hadrons (e.g. 120 GeV/c, 10^3-10^6 spill^{-1}, 2 x 2 cm) in August test
- Ion runs (e.g. 1-2 days primary particles, then fragments)

Infrastructure requirement:

- Moveable table (e.g. DESY)
- Standard table for PCs, readout, voltage source
- (Beam trigger)

SPS 2021 - Setup August