Status update: ARES Data Analysis and LUXE320 Detector

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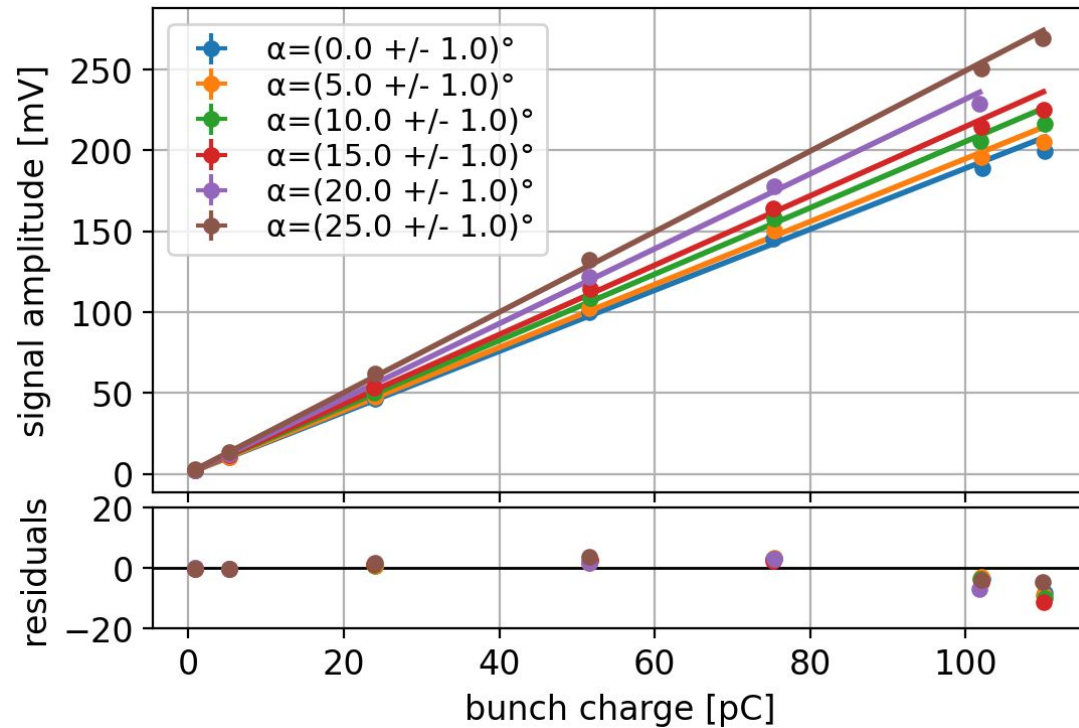
20.02.2024

HELMHOLTZ

DESY.

ARES Testbeam Data Analysis

Charge Scan

- Shows linear response for low charges

- Analysis of non-linearity for high charges ongoing
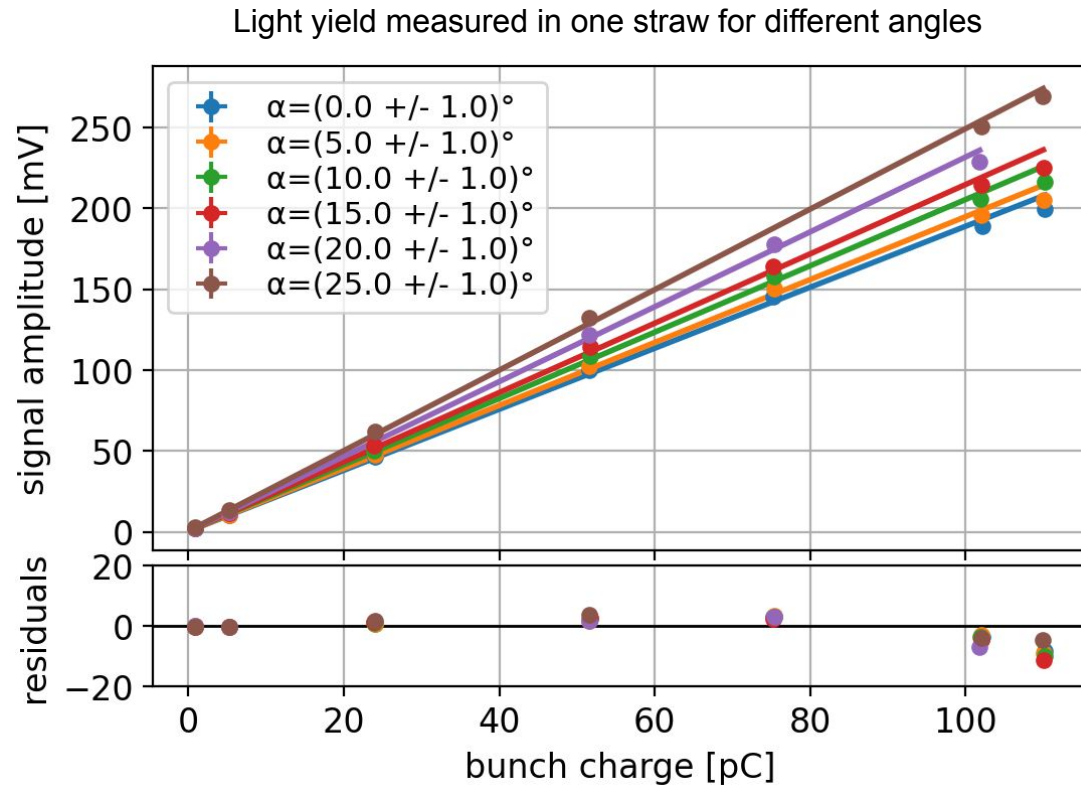
  → Charge overestimation?

Light yield measured in one straw for different angles
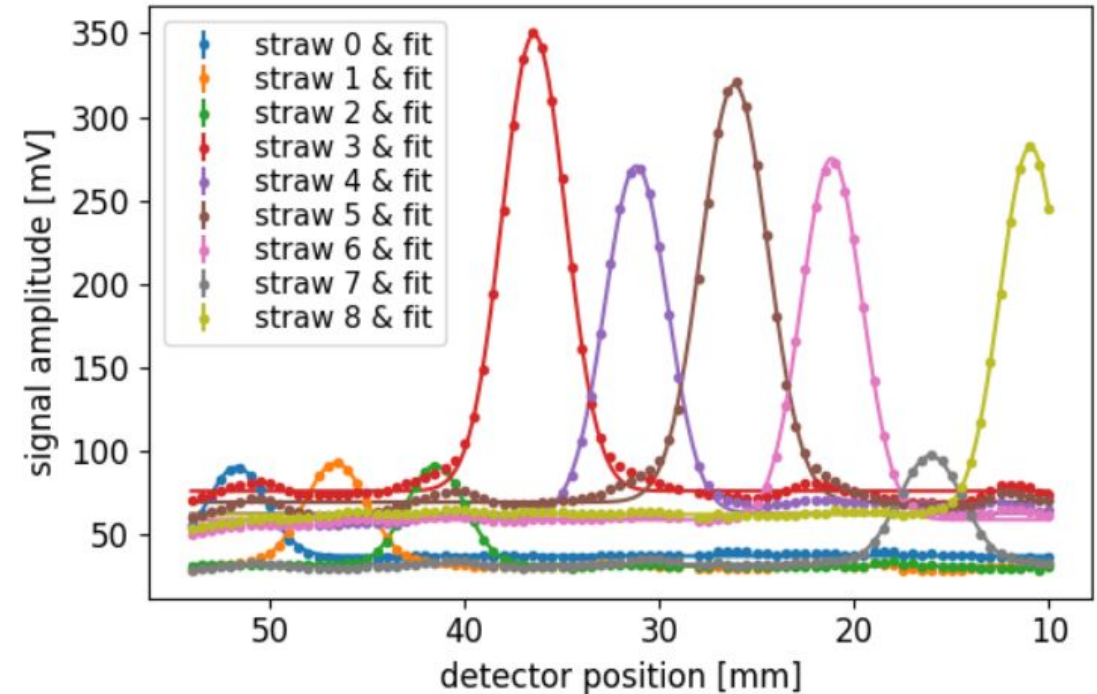
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Position Scan

- Horizontal beam profile measurable

- Different heights due to straw position (front or back row) and SiPM model (blue vs. green)

- Offset origins most likely from direct particle hits in the SiPMs

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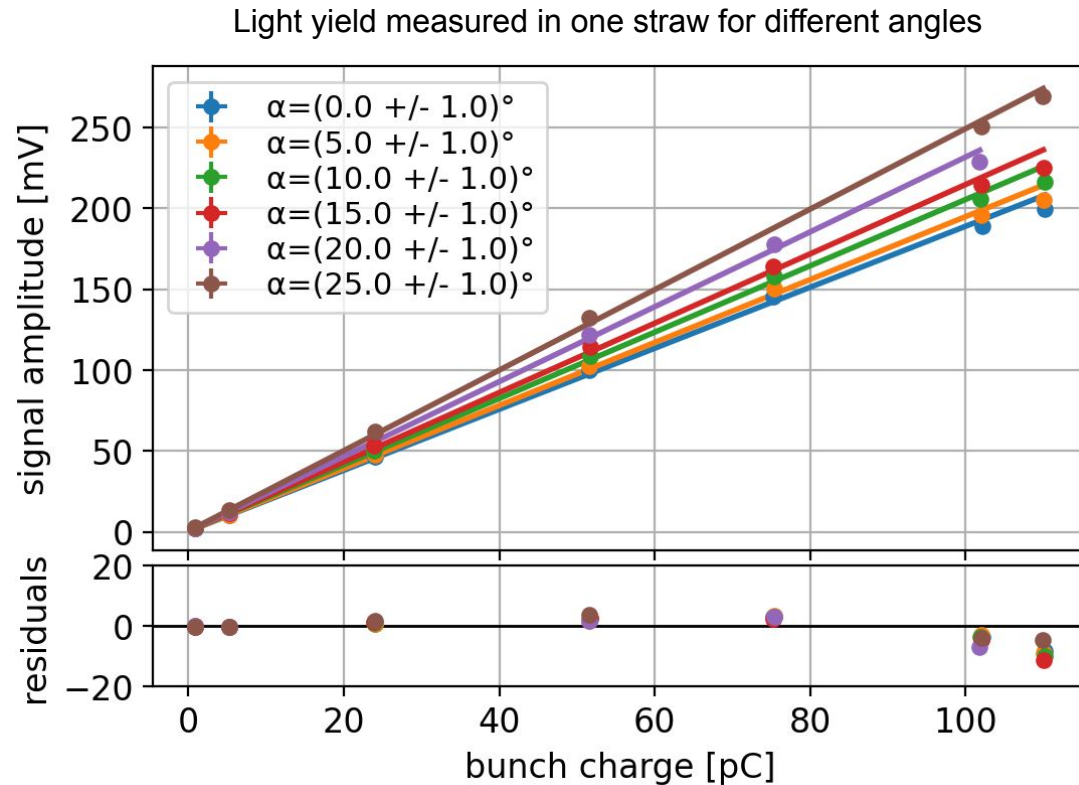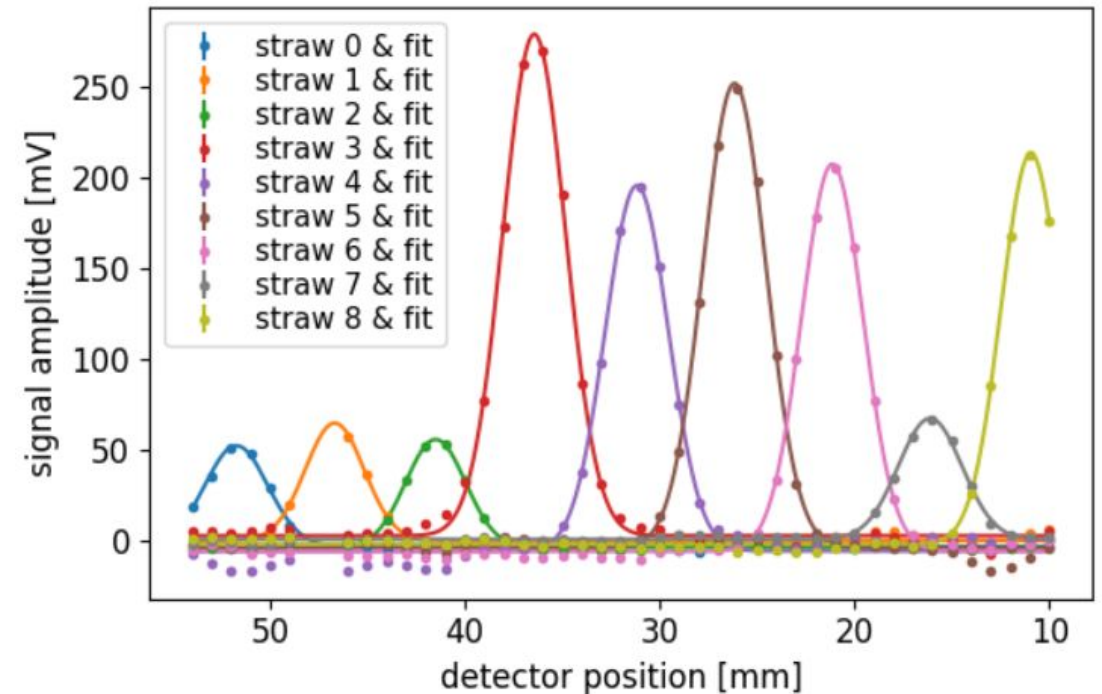
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LUXE320 Detector

Status

- Material lists for SLAC setup (Antonios)

- First CAD drawing of detector with 32 straws and Daniels PCB
  (2 times 2 rows à 8 straws) in progress (Karsten, Daniel, Antonios)

- Geant4 simulation work in progress (Evan, Antonios)

- ESTA application confirmed (Ivo, Antonios)

- EPICS successfully installed for the first time (Luke)

- 32 channel digitizer, PCB & SiPMs ordered

- Further discussions with SLAC necessary for beam time schedule

  → Earlier than June probably not feasible for us

Dump table, view from top

Stage with movable frame (Move screen and straws in and out of beam)
Straws + electronics on movable frame
Rotatable 0°-30°

10cm
25cm

Beam window

Scintillating screen(?)

~20 long cables (O 20m), 1 ethernet cable, 1 motor control cable?

Readout electronics:
- Digitizer (VME?)
- PC
- NIM crate
- Pulsed-LED driver