CALICE at PS-T09:
first week status and planning

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for the CALICE and CEPC Calorimeter teams
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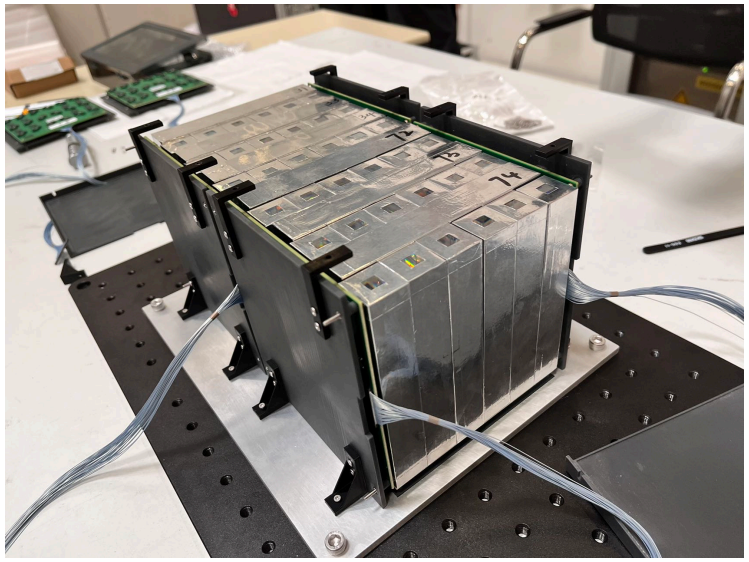
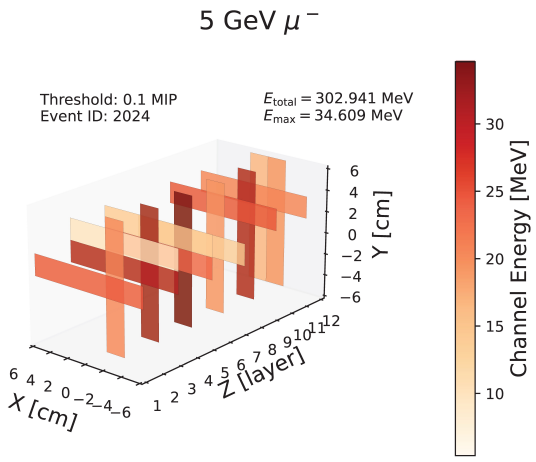
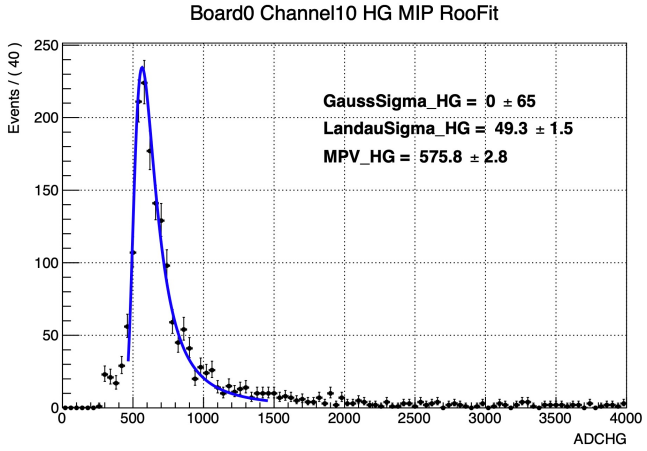
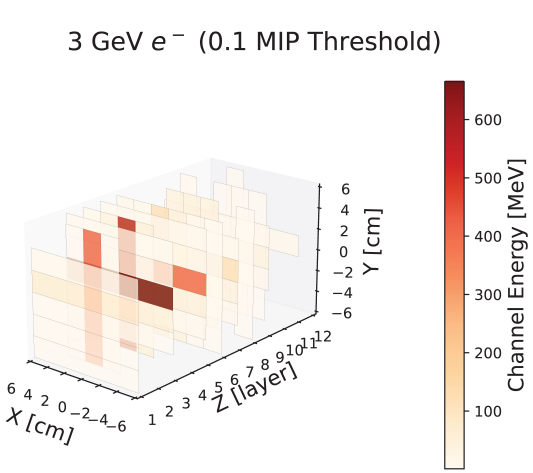
First week at PS-T09: June 27 – July 3

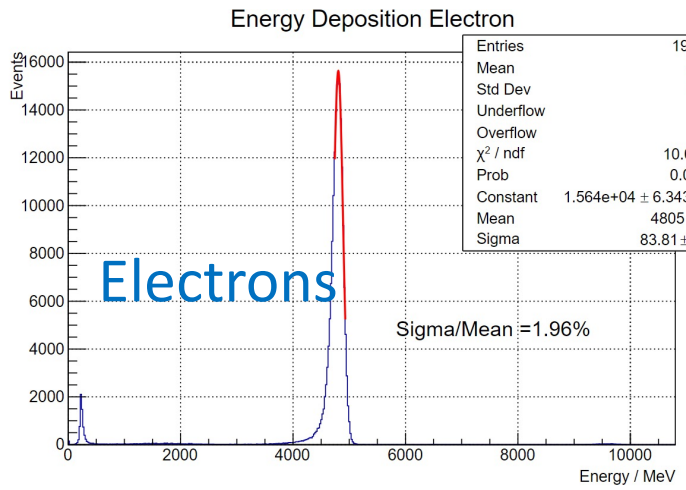


- Smooth data taking
  - Muons at 5 GeV and 10 GeV: MIP calibrations
  - Electrons 1 – 5 GeV: energy scans



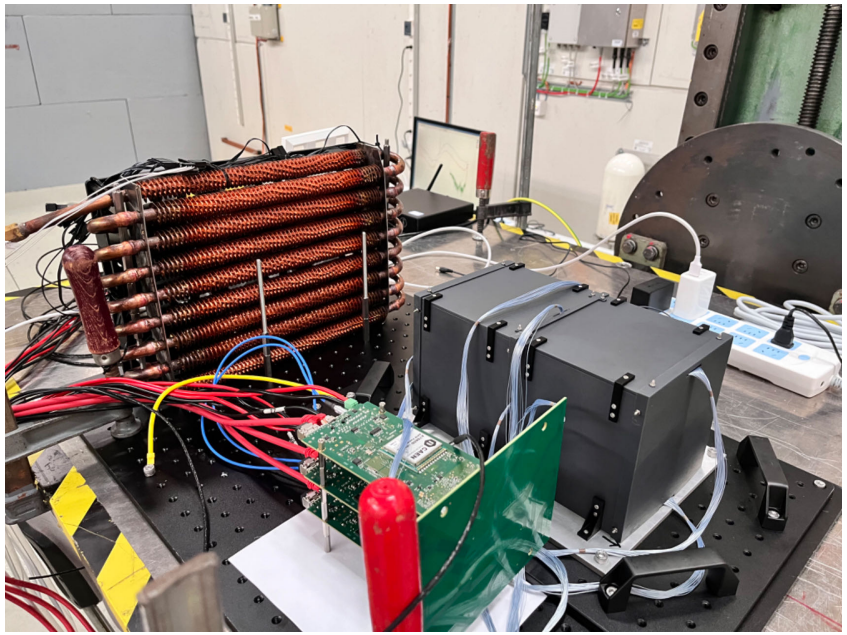


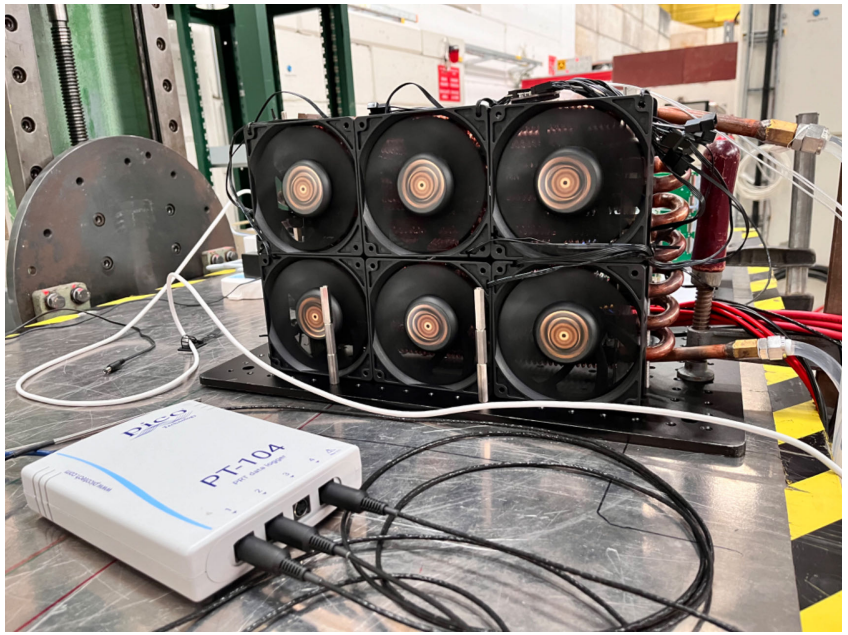




First week at PS-T09: June 27 – July 3

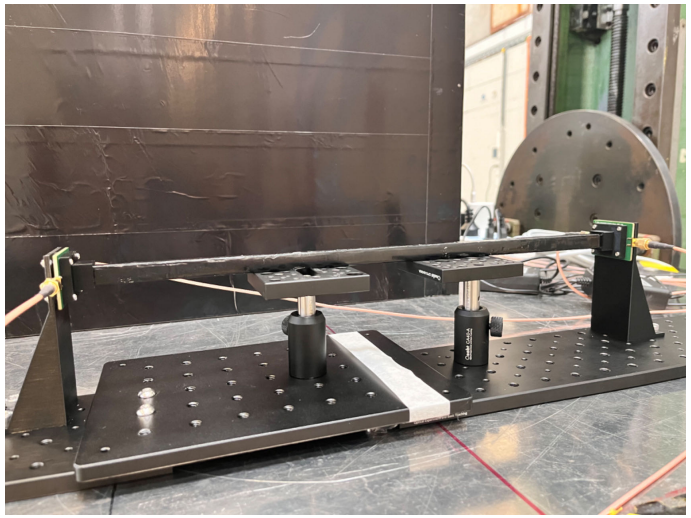
- Active cooling system in operation: very stable temperature control
  - Mini-chiller (with distilled water), copper cooling plate and fans

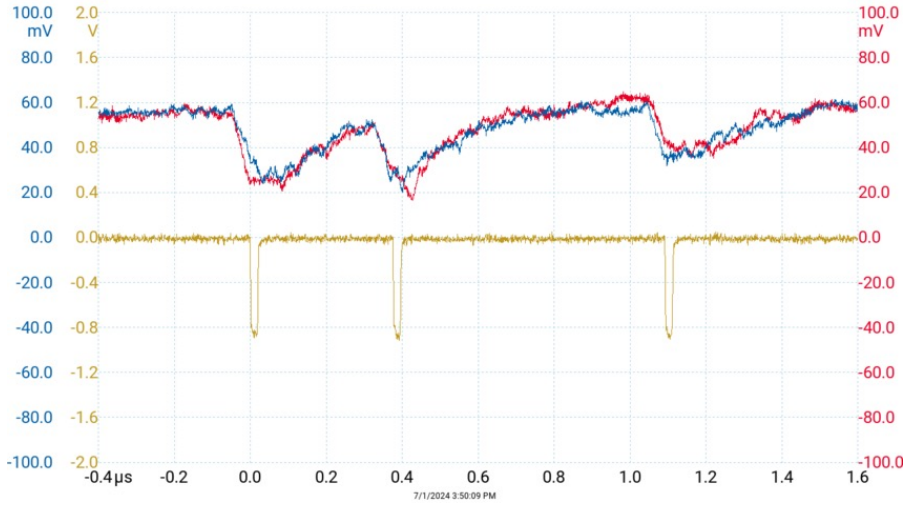


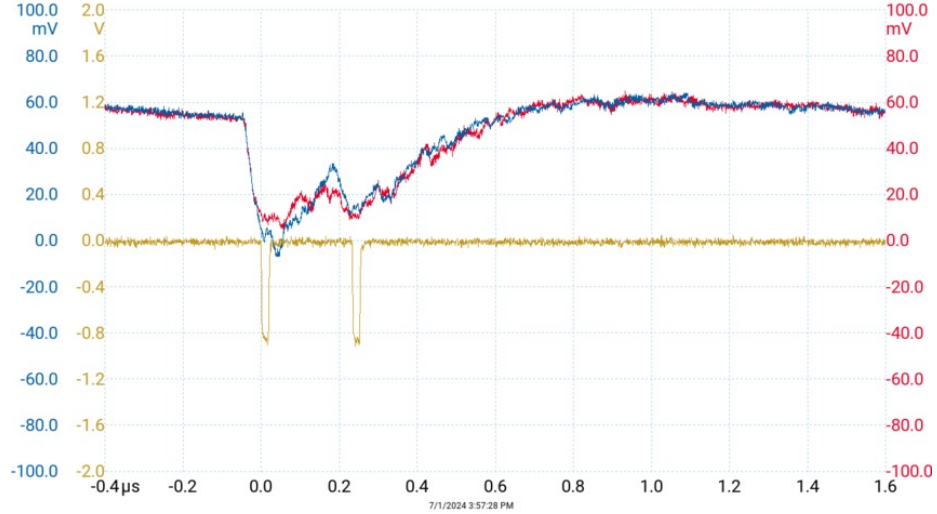


First week at PS-T09: June 27 – July 3

- Crystal bars: data taking with 5 GeV muons
  - Studies on MIP timing performance





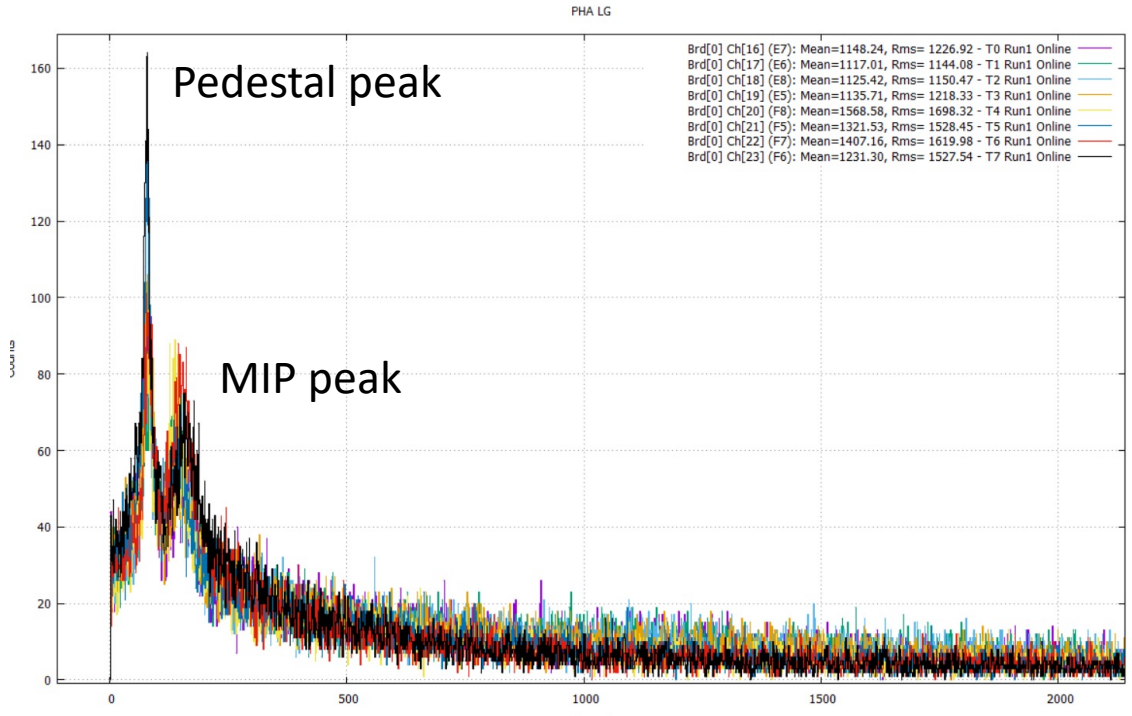


- Observed multiple particles in a 1us time window (5GeV muon-, BST out)
  - Mixture of muons and pions (larger signals in crystal prototype)
- 5GeV muon+ (from 6.8 GeV hadrons): with BST out
  - Much better in beam purity than negative muons
- With beam stopper (BST) in beamline, the event rate dropped more significantly than 2023

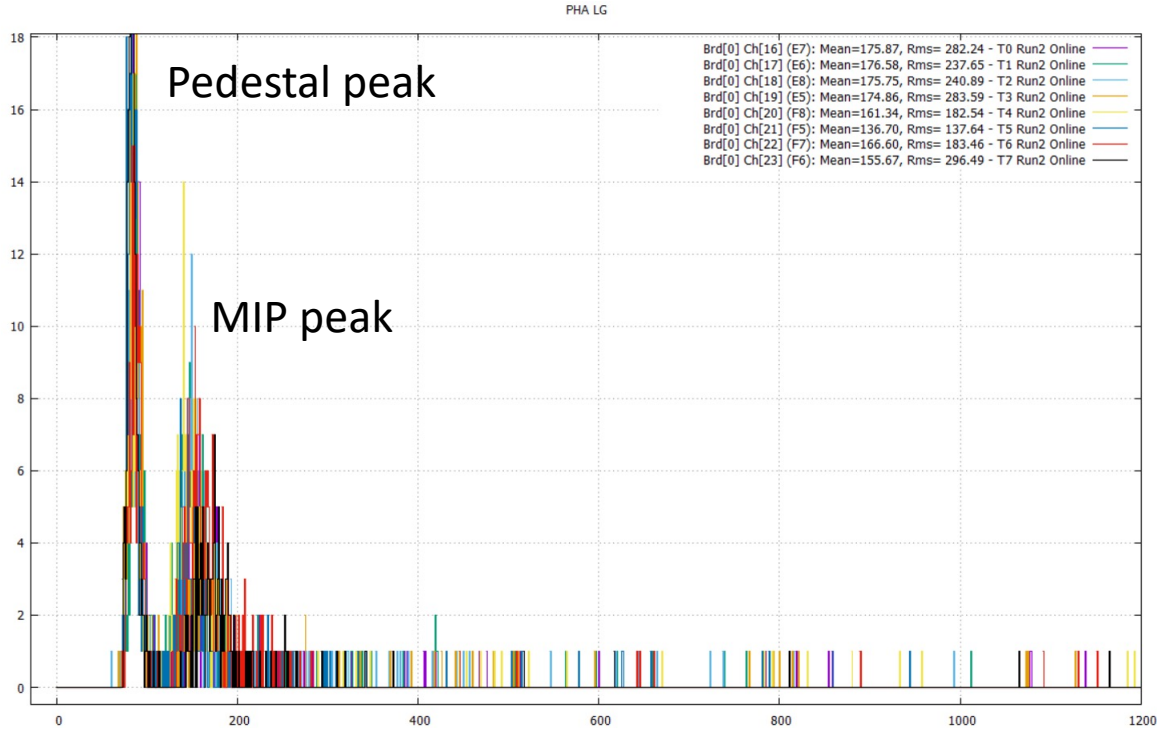
Muon beam

5GeV muons, negative polarity

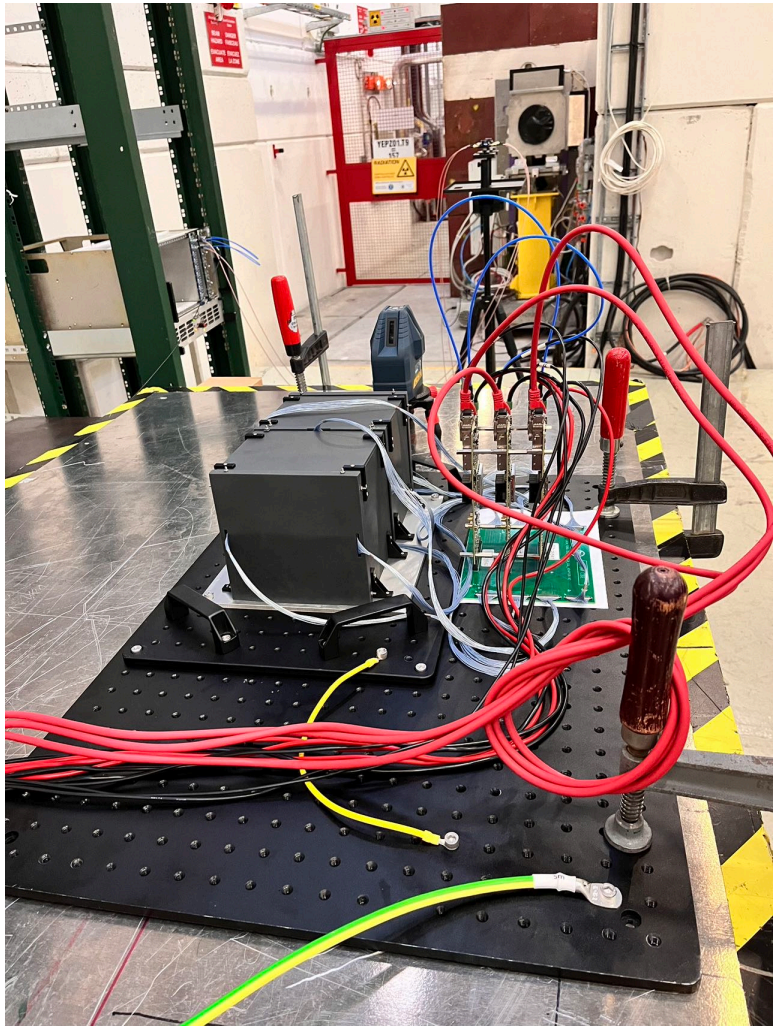
Lower purity with beam stopper (BST) out, higher beam rate



Higher purity with beam stopper (BST) in, lower beam rate



Plans



- Planning 2nd week at PS-T09
  - Task 1: to test second readout electronics for the crystal protype (MPT chip, 32-ch)
  - Task 2 crystal timing performance
  - 5 GeV μ^+ for MIP calibrations
  - Energy scans of e^- in 1-5 GeV

- Acknowledgements
  - Alex (HSE team) for safety inspection
  - Andre for the mini-chiller and helpful discussions
  - Dipanwita for many helpful suggestions for PS-T09
  - Aboubakr for local technical support