FoCal-H 2024 May TB

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Users Meeting 30.05.2024

22.05.2024 - 29.05.2024 H2 NA SPS TestBeam

Two readout systems successfully installed, validated and verified

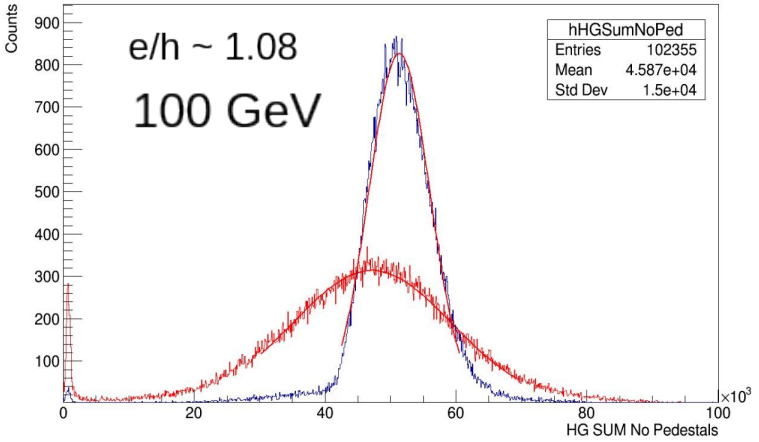
CAEN DT5202 - as a reference, existing experience

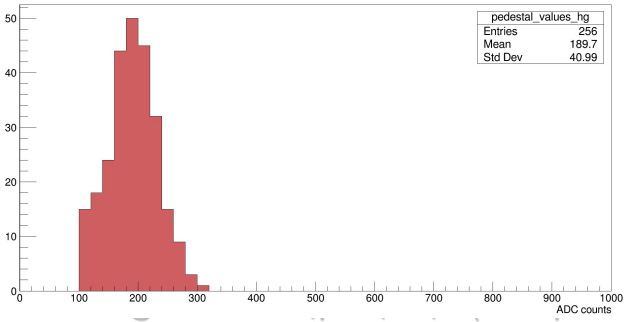
H2GCROC3 - first look, test operability

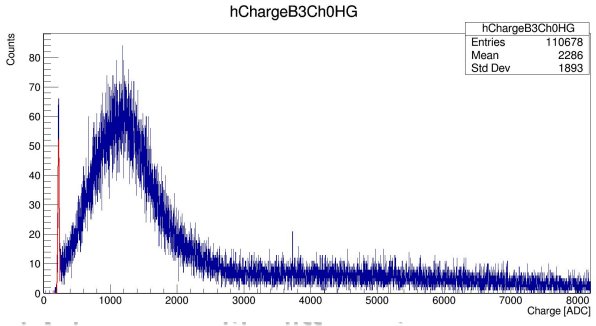
Various tests were performed and a good amount of data was collected

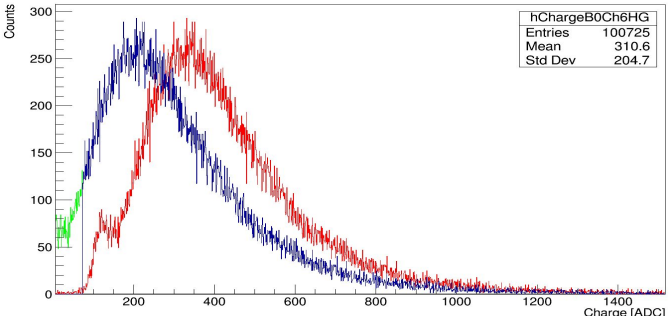
CAEN DT5202 Data Acquisition 23.05 - 27.05

- Synchronisation tests (using DT5215 Concentrator Board)
- Gain Scans - to precise the HG and LG values for each of the two circuits
- Energy scans - 100k events collected per energy for both ***e*** and ***h*** beams
- Compensation tests (used ***e*** and ***h*** beams with different energies)
- Punch Through Data - To check detector performance and saturation peak value as a reference point
  homogeneous response test (negative rotation tests)
- Position Scans - data taken for ~ 50 points with ***h*** and ***e*** beam



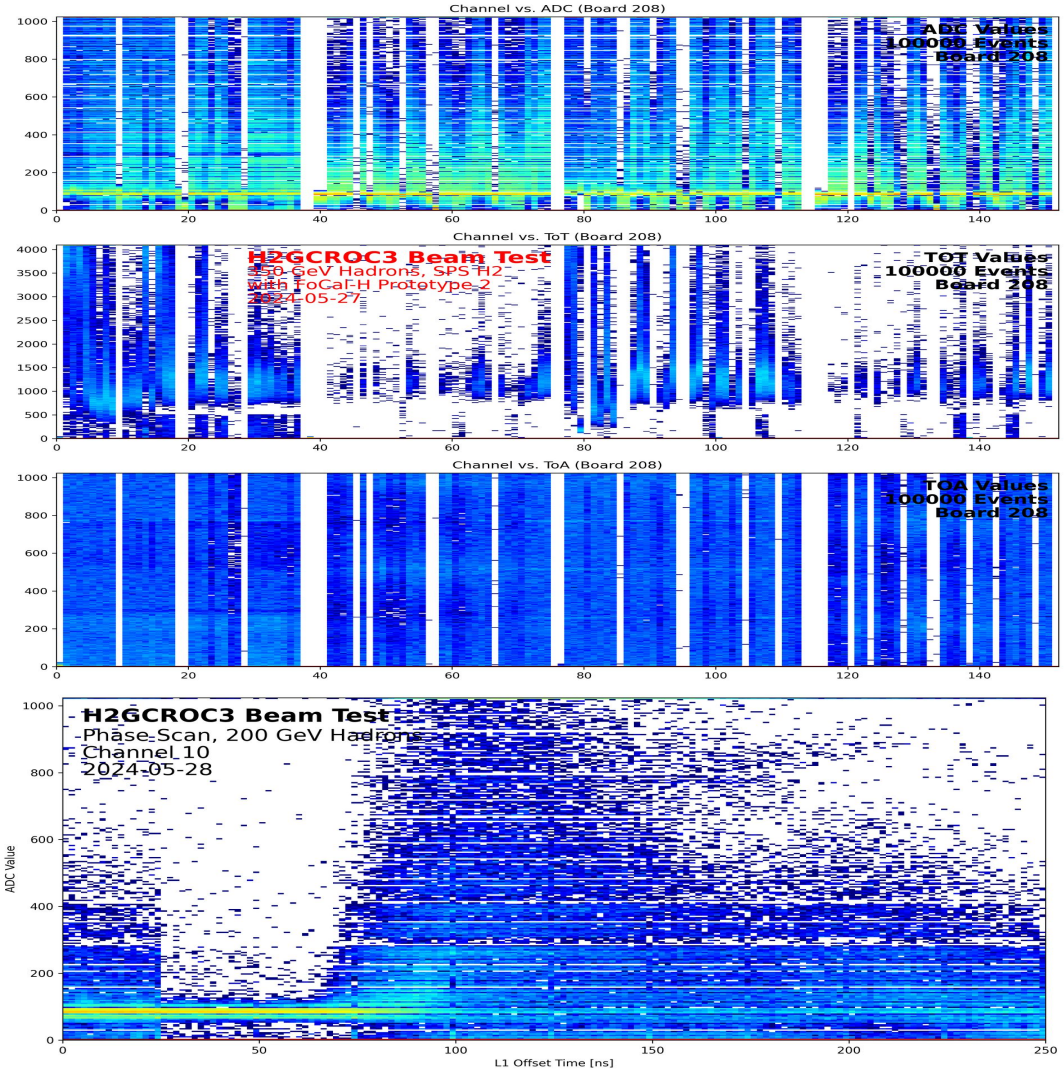






First H2GCROC3 TB

- Technical Runs - Start on 22.05
  h and ***e*** energy scan runs
- Unmount on 23.05 (in the meantime CAEN Data taking and Precising the H2GCROC3 system)
- From 27.05 until 29.05
- Phase Scan at 200 GeV ***h***
- Energy scans - 100k events per energy, ***e*** and ***h*** runs with various energies
  - hadrons: 60 - 350 GeV
  - electrons: 40 - 200 GeV
- Position scans - 10 points per particle type
  performed at 250 GeV for ***h*** and at 100 GeV for ***e***



Conclusions

2 readout systems were successfully tested and verified and the detector performance was studied

CAEN DT5202:
Dedicated pedestal runs were taken before beam runs
Synchronisation in the boards was improved due to the usage of DT5215 concentrator board
Detailed position scans - more points than before!
Dedicated compensation runs - ongoing analysis (also with MC)
At first look at the analysis, the saturation in the electronics seem less than in previous TBs
H2GCROC3:
Two boards were installed and tested for the first time!
Analysis software developed during TB
Various tests performed and the data looks promising
Now it is time to analyse