

# Update on test with $^{90}\text{Sr}$ with tiles

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# Update on test with $^{90}\text{Sr}$ with tiles

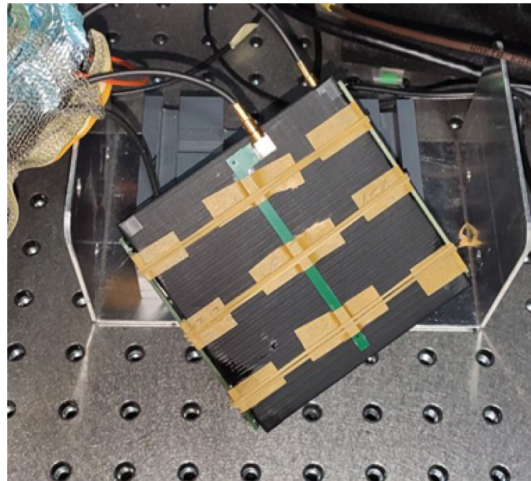


We will illustrate an update of the last tests based on the tiles configuration for the PSD geometry.

# *Experimental setup*

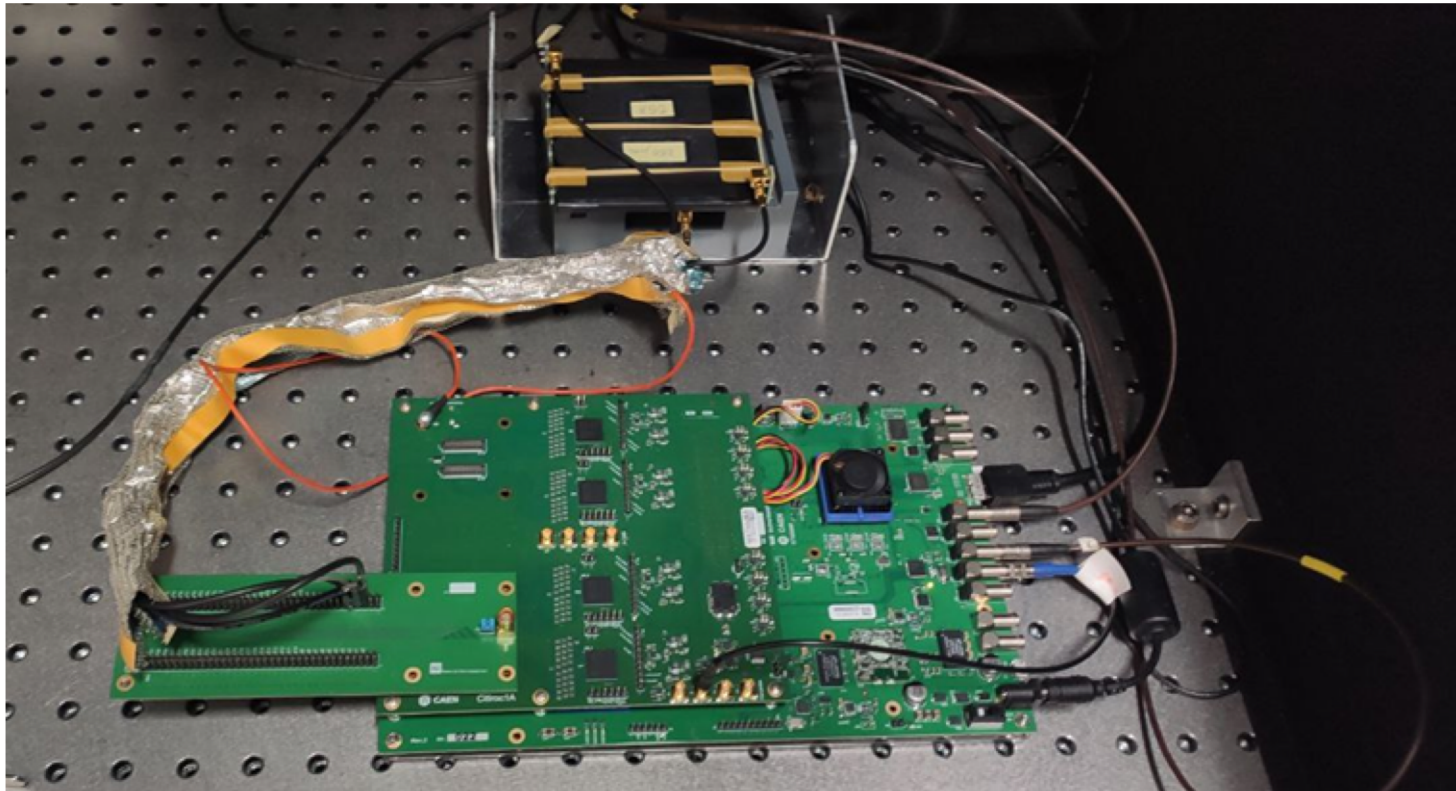
We have used a 10x10x0.5 cm<sup>3</sup> BC – 404 tile equipped with 3 PCB with Hamamatsu Silicon Photomultipliers (SiPMs):

- 2 PCB equipped with 3 SiPMs 3x3mm<sup>2</sup> (15μm cell) S14160-3015ps
  - Ch17 on one side and Ch18 on the top
- 1 PCB equipped with 3 SiPM 1x1mm<sup>2</sup> (15μm cell) S14160-1315ps
  - Ch16 on one side



# *Experimental setup*

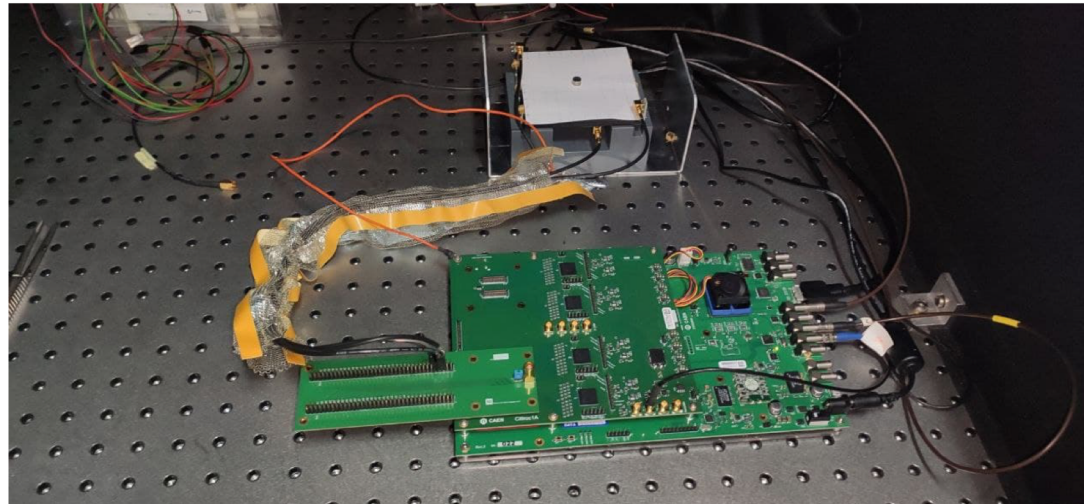
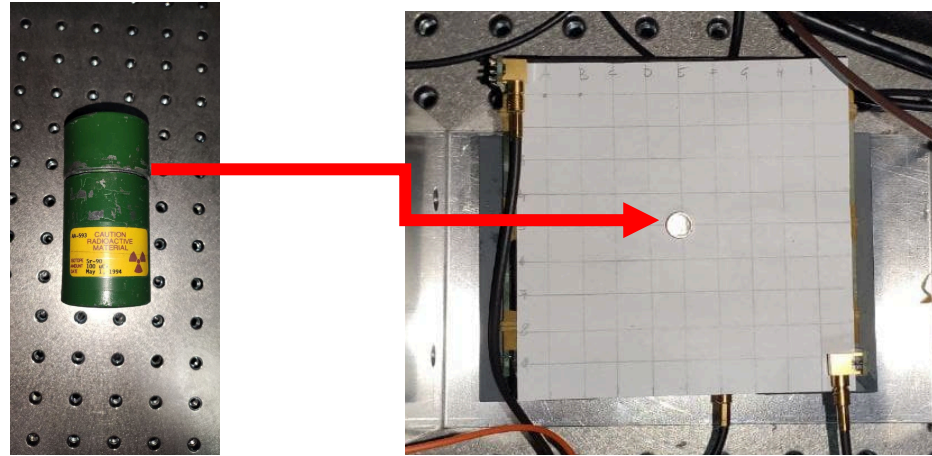
The signals have been acquired with the CAEN DT5550W board based on the CITIROC ASIC. The entire setup was placed in a dark box.





# *Experimental setup*

We have performed a test with a radioactive  $^{90}\text{Sr}$  source moving the source with 1cm steps both in X and Y (81 runs in total with an acquisition time of 60 sec), and a test with cosmic-rays.

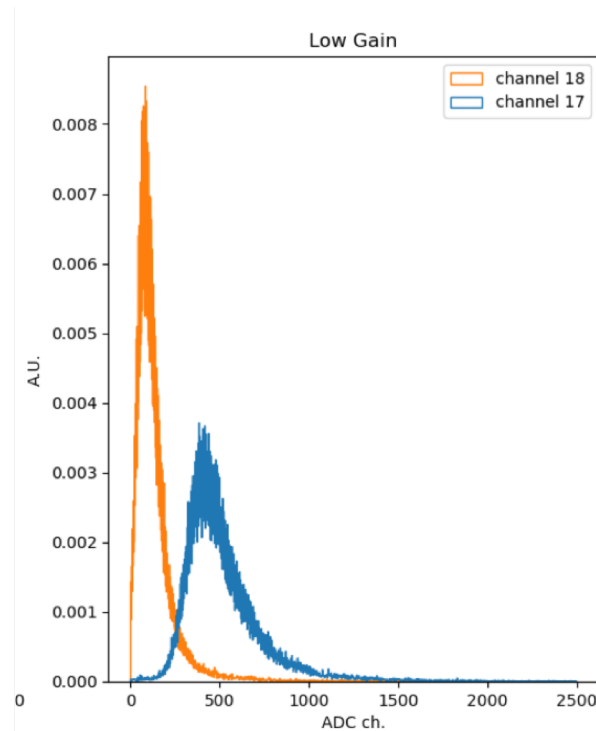


# Test results

- We triggered on the PCB equipped with S14160-1315ps both in the cosmic-ray and  $^{90}\text{Sr}$  source tests

## Cosmic-ray test results

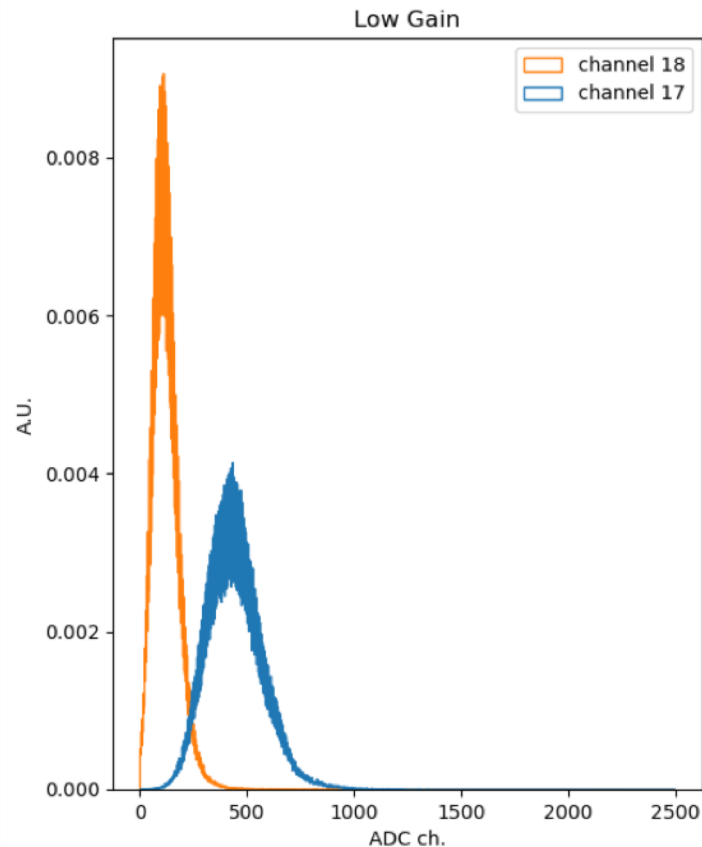
- Spectra are shown the for top (ch18) and side (ch17) PCB. The SiPMs on the top side seems to collect 1/3 of the light on the one of the side.



# Test results

## $^{90}\text{Sr}$ source test results

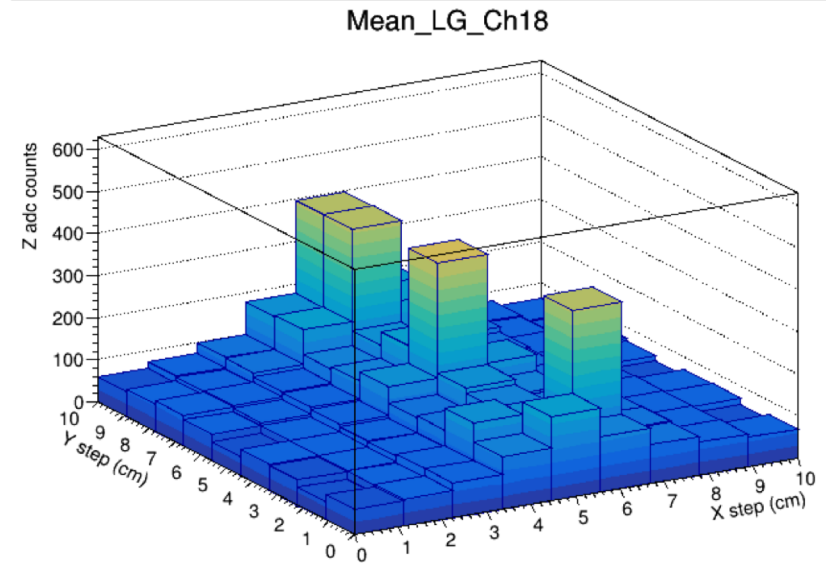
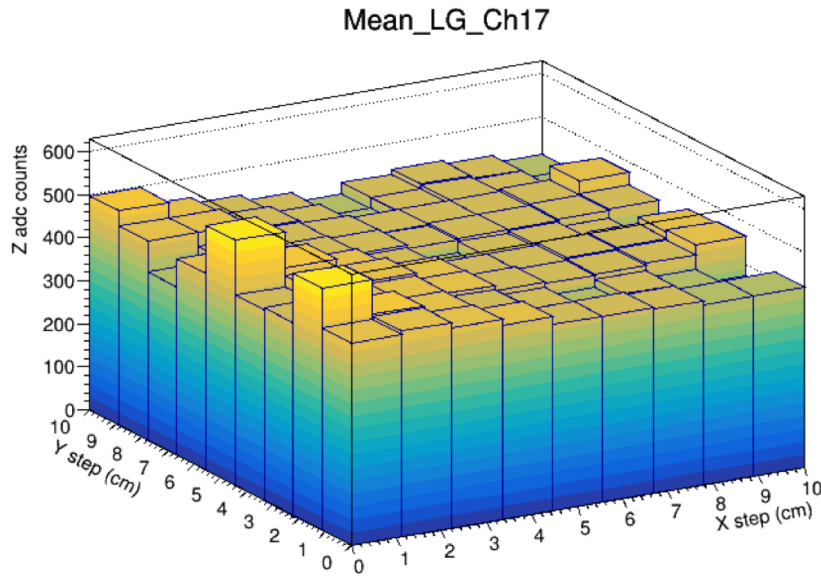
The distribution for top (ch18) and side(ch17) SiPMs was shown, placing the source in the position (4,3) cm.



# Test results

## $^{90}\text{Sr}$ source test results

Mean value of the measured spectra are shown for top SiPMs and side SiPMs respectively.



The number of photons increases when the source position is close to the SiPMs.

Side SiPMs shows a better uniformity response respect to the top ones.

# *Conclusions*

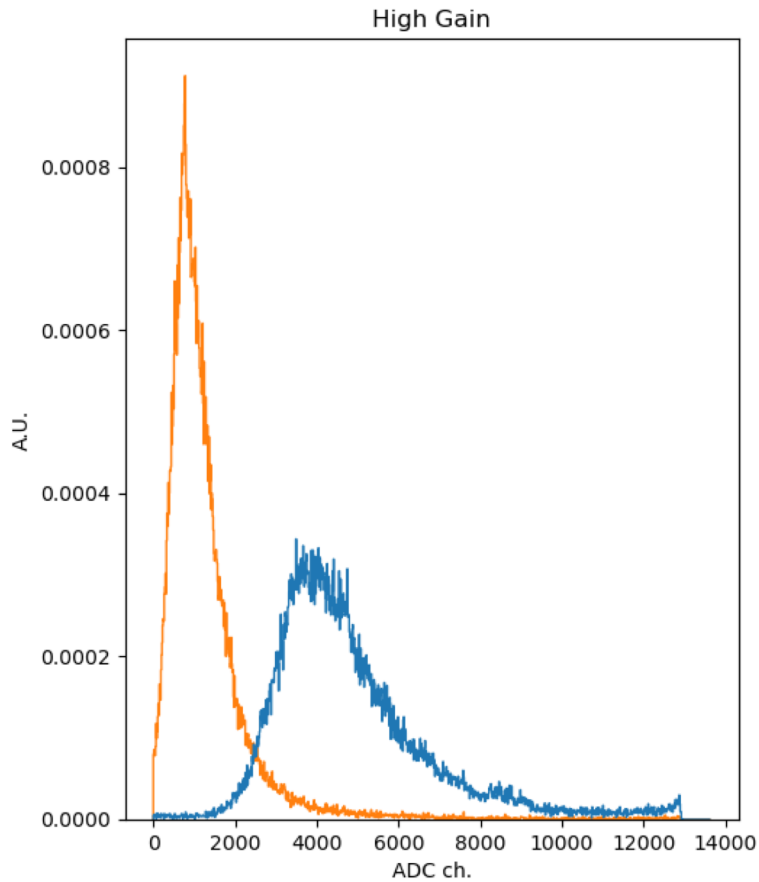
- The aim is to reach the best particle identification performances based on the choice of the best PSD geometry and on the optimization of the electronics.
- Other tests are ongoing!

# *Backup*

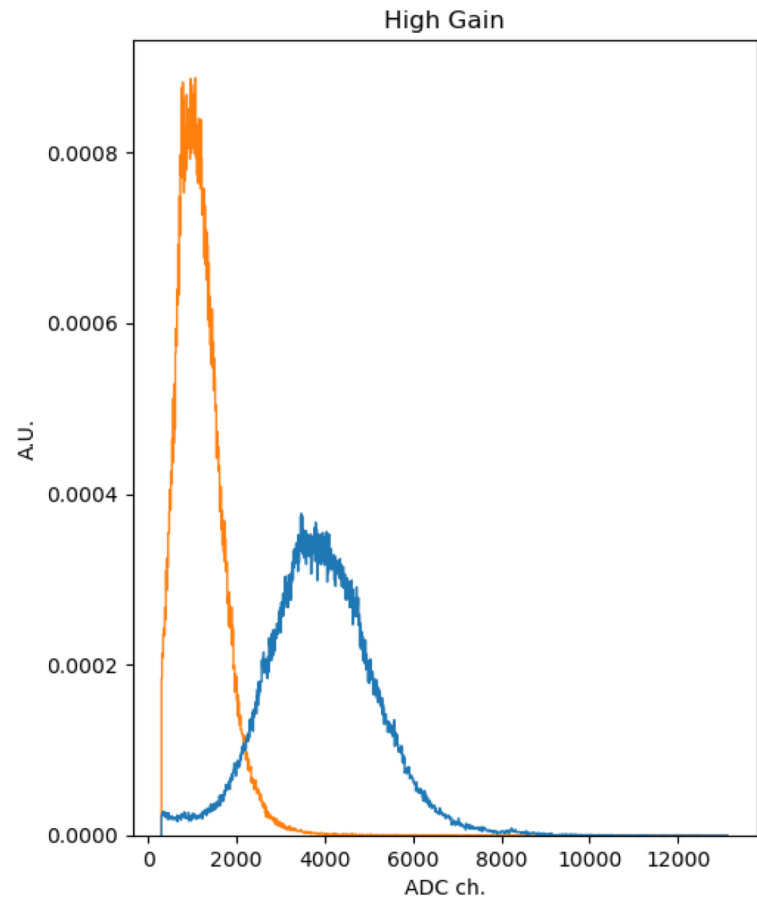


# High gain test results

## Cosmic-ray test results



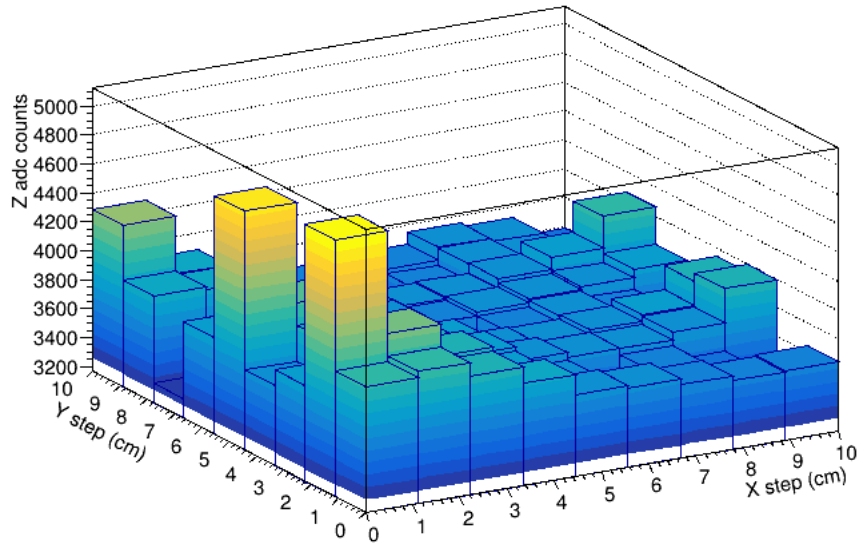
## $^{90}\text{Sr}$ source test results



# High gain test results

$^{90}\text{Sr}$  source test results

Mean\_HG\_Ch17



Mean\_HG\_Ch18

