

RIPTIDE

July 2025

Gen-Z Learner's Dictionary

Skill issue: *idiom. , gerg.* – indica che un problema o un fallimento non è dovuto a fattori esterni o a sfortuna ma alla mancanza di abilità (skill) da parte dell'individuo coinvolto.

es.

- “Non abbiamo visto nessun segnale con l'MCP della PHOTEK.”
- “Skill issue.”

Courtesy of N. Pieretti

TO DO

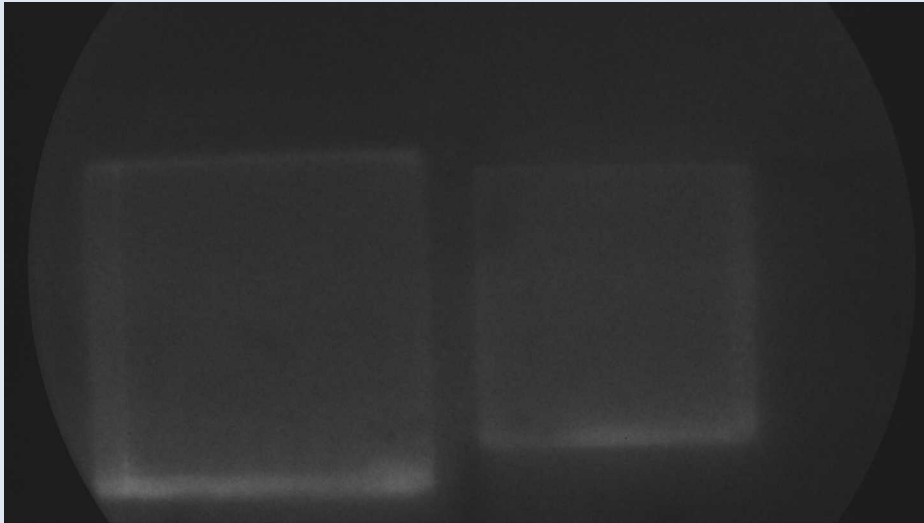
- define a *fast* threshold for the camera (that can be used with the framegrabber)
- 3D reconstruction of muons tracks
- study of the noise of the camera noise

RIPTIDE

- 1) online threshold
- 2) analysis on cathode quantum efficiency
(proton VS muon signals)
- 3) fun fact

1) online threshold

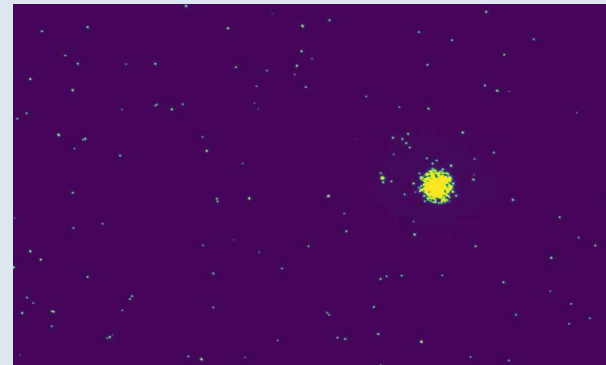
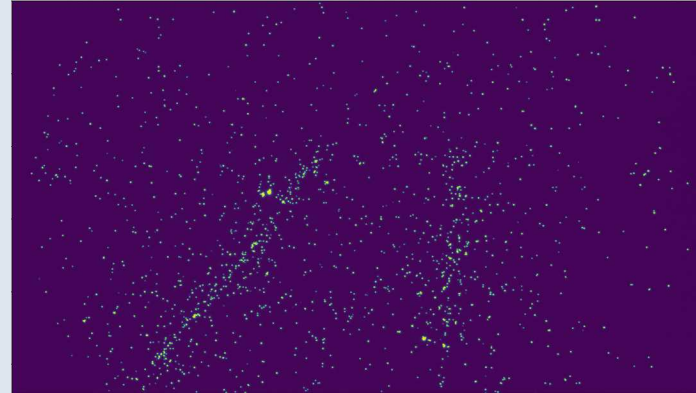
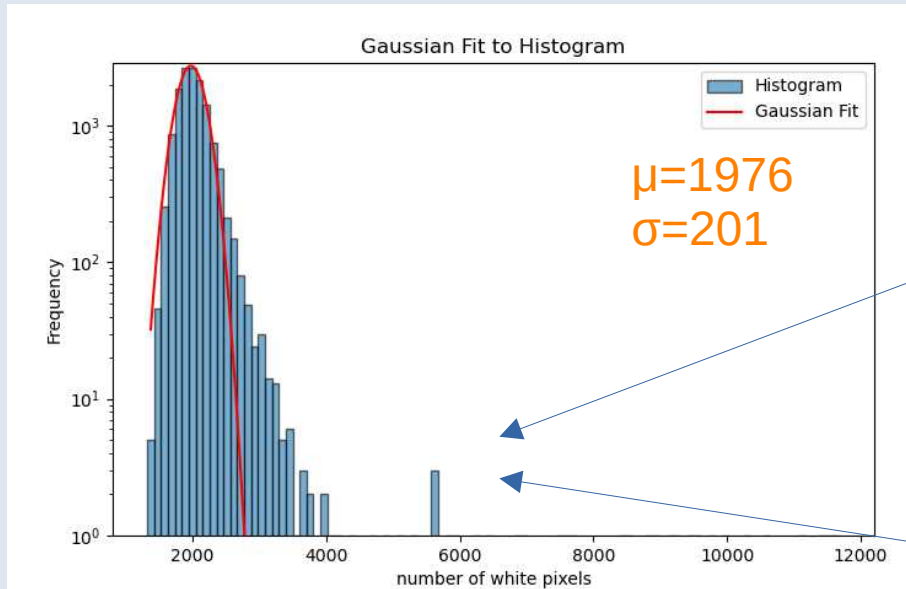
i.e. fast enough to be runned in framegrabber



1) online threshold

i.e. fast enough to be runned in framegrabber

Count number of white pixels



2) analysis on cathode quantum efficiency (proton VS muon signals)

LAB data

Muons on CsI with HiCam

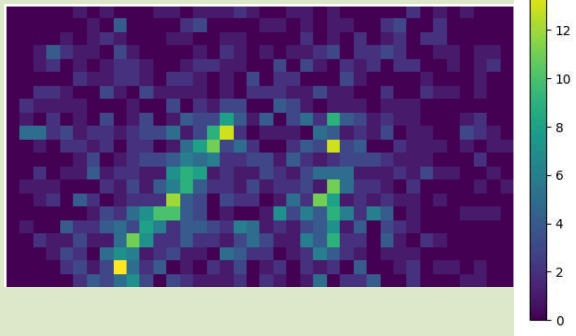
GaAs cathode -- 60% efficiency



Get spot density map and
randomly remove 50% of spot
from the signal

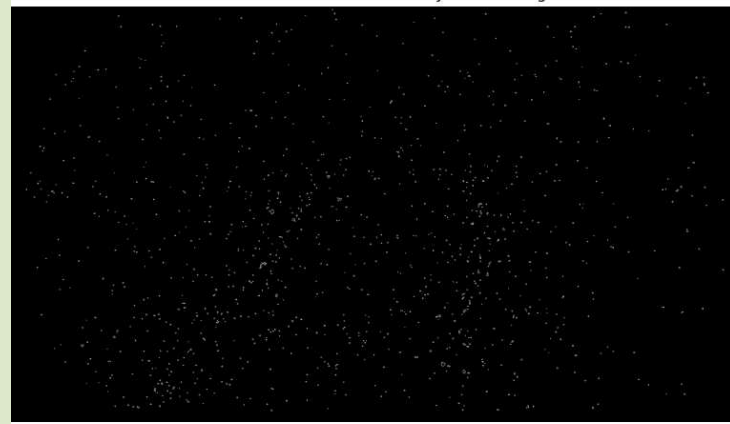


(density threshold = 6)



Effect of BiAlcali photocathode

BiAlcali cathode -- 30% efficiency-- filtered signal



NB: framerate is 64 fps.

A framerate of approx 2000 will be
used, so the noise will be reduced of
at least a factor 100

The Image Intensifier from PHOTEK *could* show the muons into CsI

2) analysis on cathode quantum efficiency (proton VS muon signals)

LAB data

Muons on CsI with HiCam

GaAs cathode -- 60% efficiency



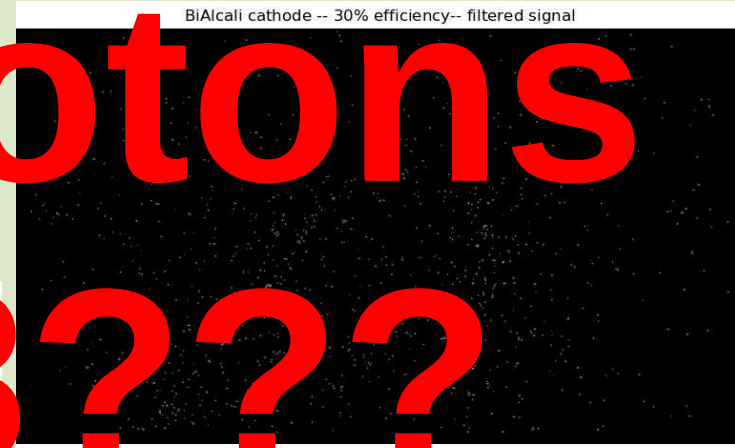
Spot density map and
randomly removed 50% of spot
from the signal

(density threshold = 6)



Effect of BiAlkali photocathode

BiAlkali cathode -- 30% efficiency -- filtered signal



NB: framerate is 64 fps.

A framerate of approx 2000 will be used, so the noise will be reduced of at least a factor 100

The Image Intensifier from PHOTEK *could* show the signal

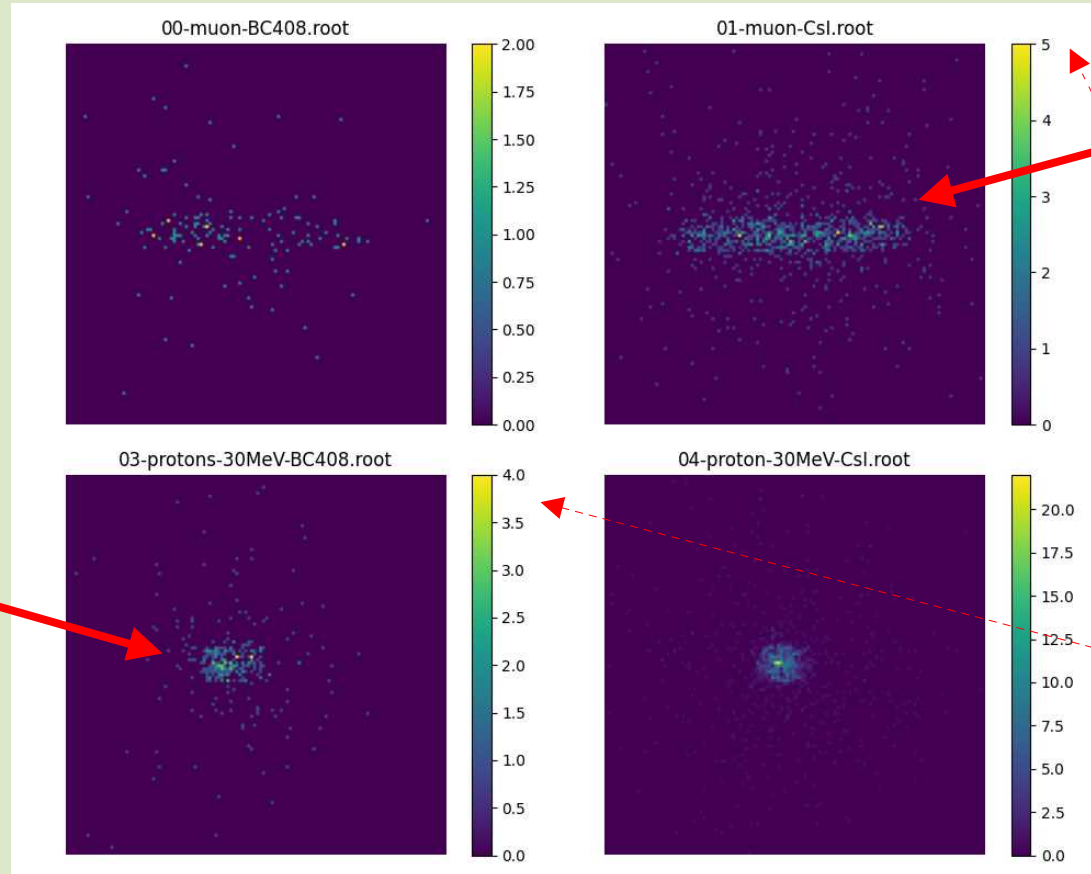
And for protons
in BC408???

2) analysis on cathode quantum efficiency (proton VS muon signals)

MC
simulations

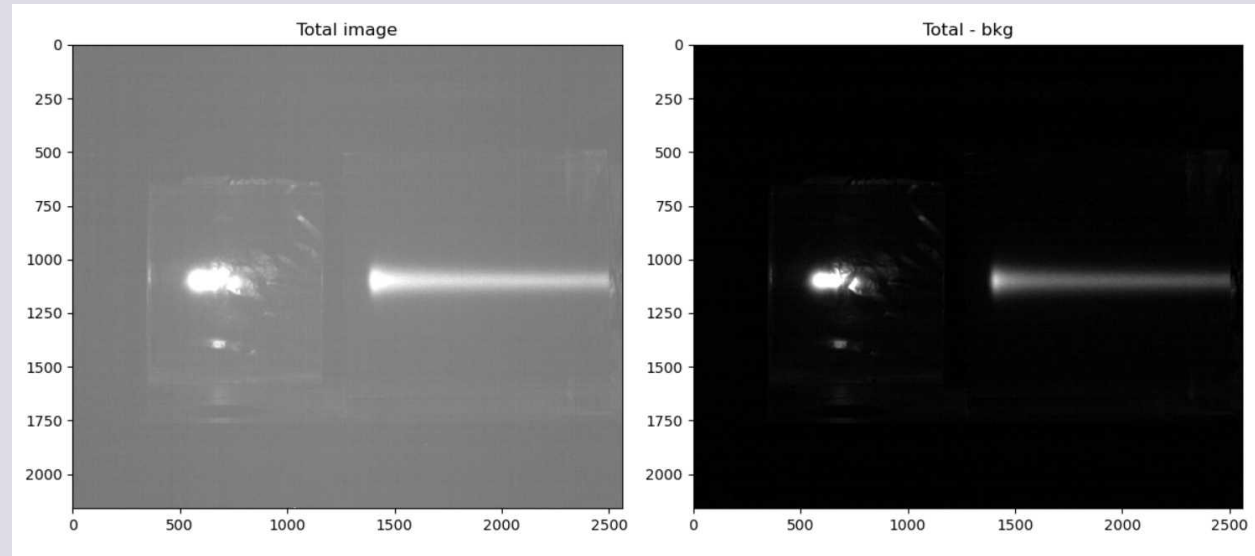
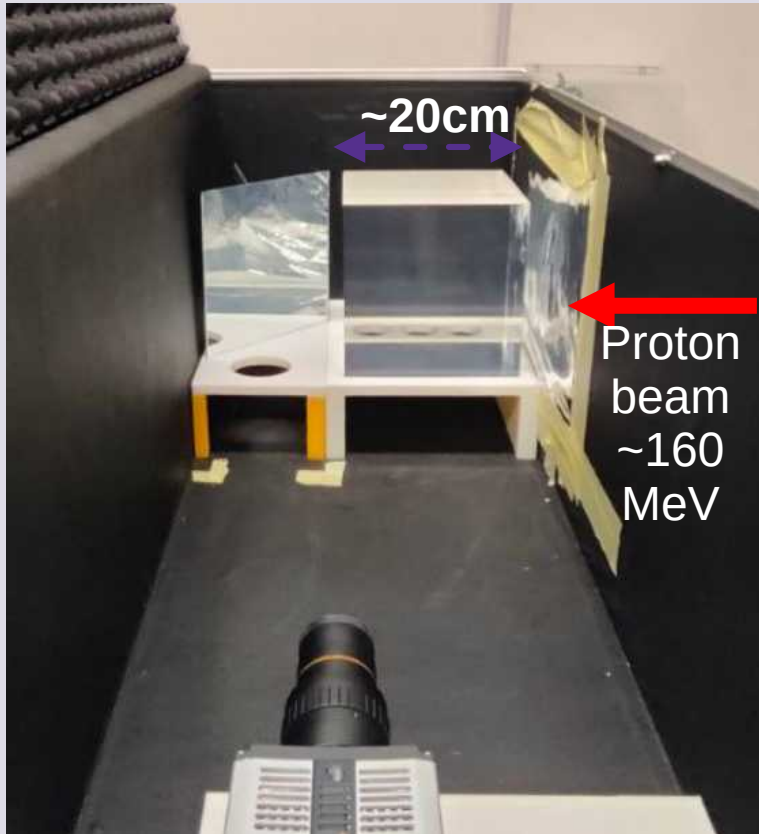
Considering 30% QE

Proton
on
BC408



similar photon
density

3) fun fact -- @ CNAO



Courtesy of M.Dondi

THE END