

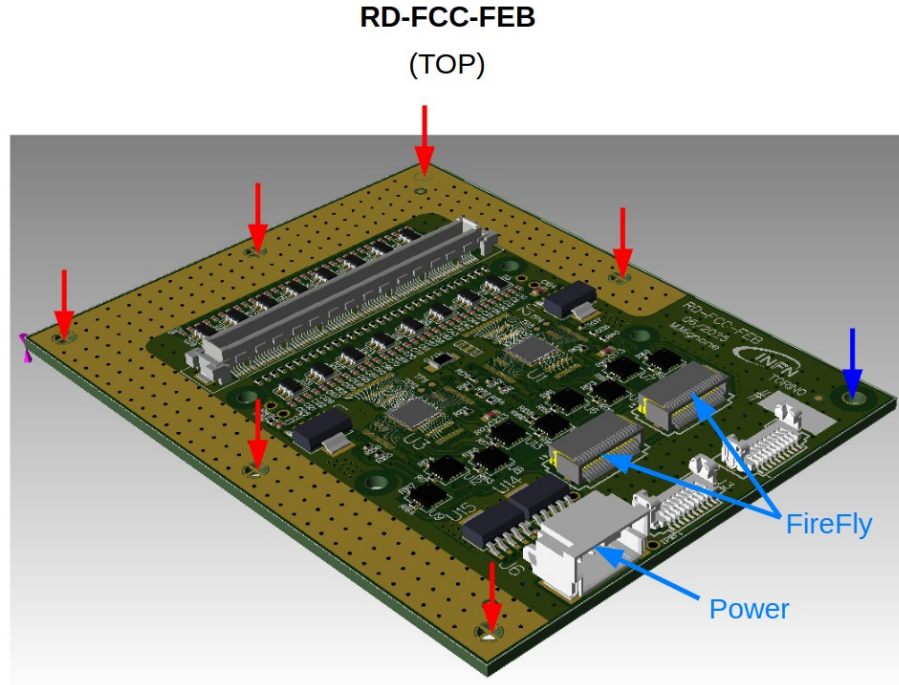
Updates about test beam preparation

G Mezzadri for the working group

Plans

- Groups: INFN Ferrara, Bologna, Torino
- Plans is to test uRWELL with different strip pitch and resistivity with ASIC developed for BESIII experiment
 - Test was performed last July, we bring updates to the setup to test the noise reduction
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- Gas mixture Ar:CO₂ (70:30)
- Setup:
 - 1 or 2 uRWELL “sandwiched” between 4 GEMs trackers, scintillators will provide trigger
 - 100x50x50 cm, (100 cm along the beam direction)
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Updates – Frontend Board



70mm x 90mm

- Fori metallizzati connessi a AGND
- Foro non metallizzato

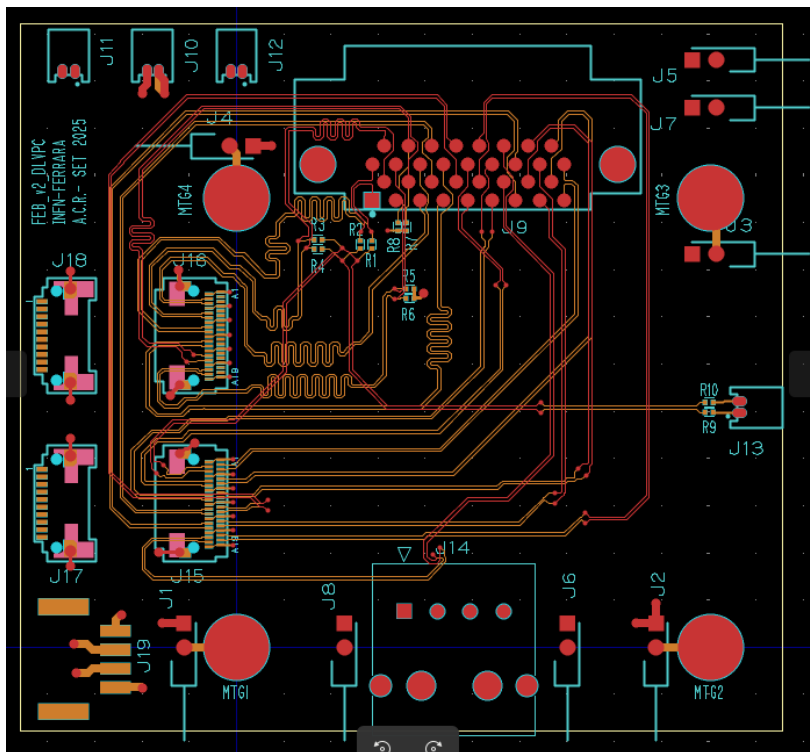
Developed by M. Mignone (INFN-TO) starting from the Frontend board used by AMBER to host the TIGER

It hosts two firefly to read the data and new LV connector to power.

More metallic band may improve grounding.

Updates – DLVPC

From GEMROC - Data



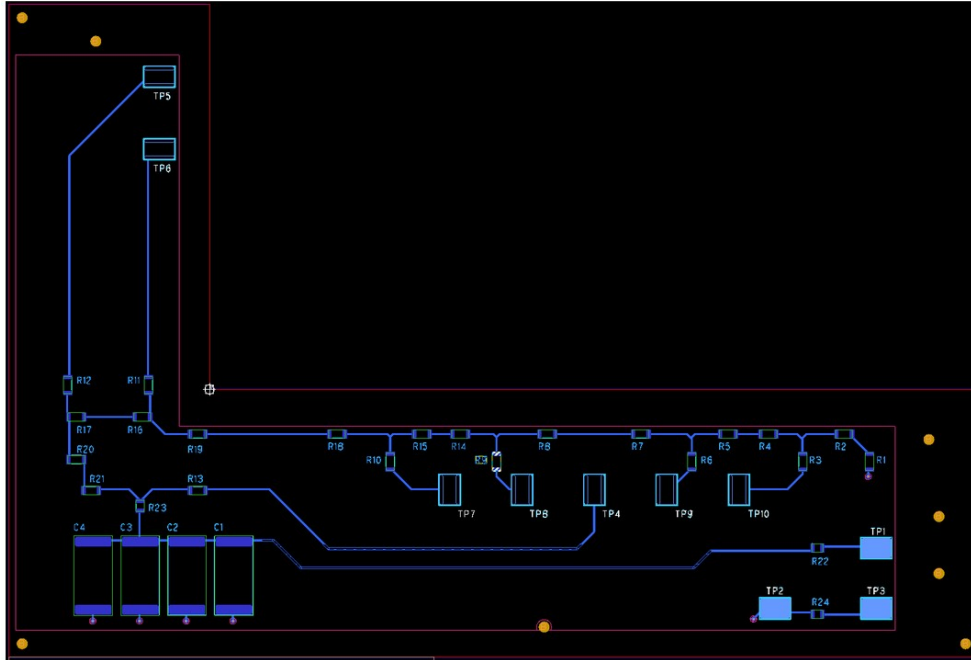
← To FEB
Data

← To FEB
LV

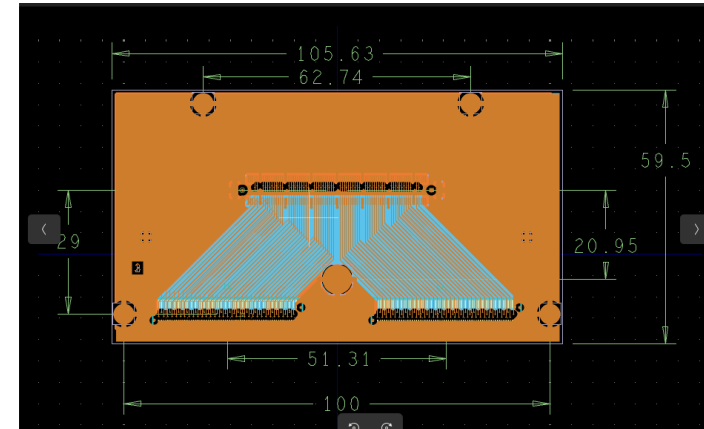
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Updates – HV and Transition board



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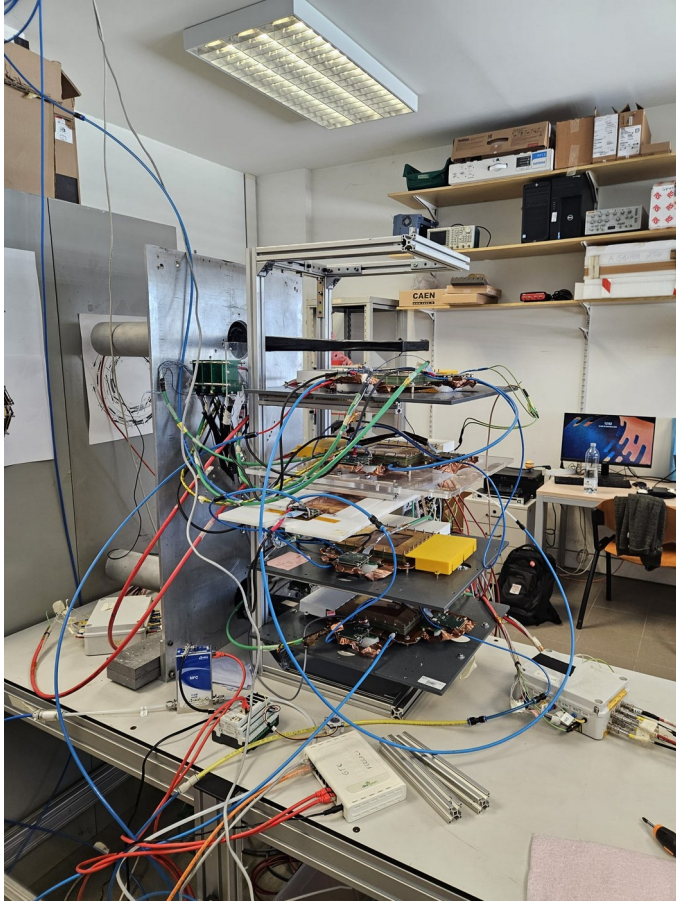


To host the new HIROSE connector

Status of the procurment

- All the materials still have to arrive in Ferrara
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Status of the setup with BESIII FEBs



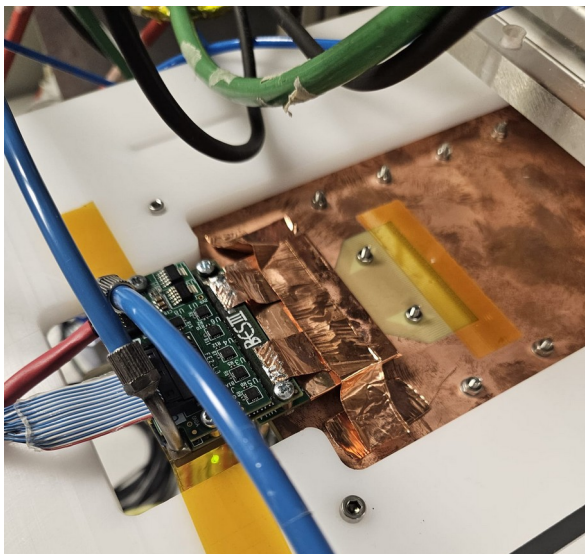
Instrumented 4 planar GEMs
+ 1 uRWELL (pitch 400 μm , resistivity 77 Mohm/square)

2 GEMROCs
8 FEBs with cooling
(3 GEMs XY, 1 GEM X, 1 uRWELL X)

Interlock provided by CONTROLLINO system (check status of gas and cooling)

Cosmic rate ~ 0.1 Hz

Ground and noise

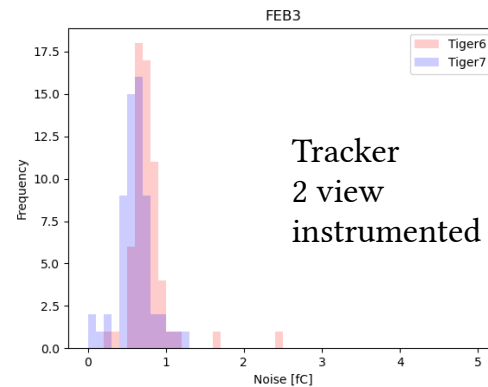
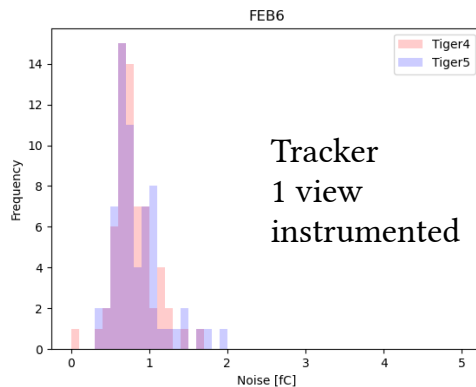
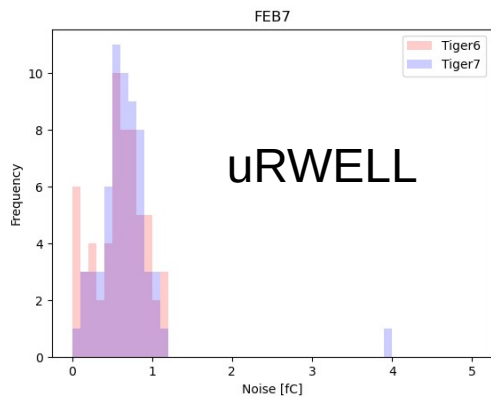


L3 FEB used to readout the uRWELL
(missing channel 62 and 63 on both ASICs)

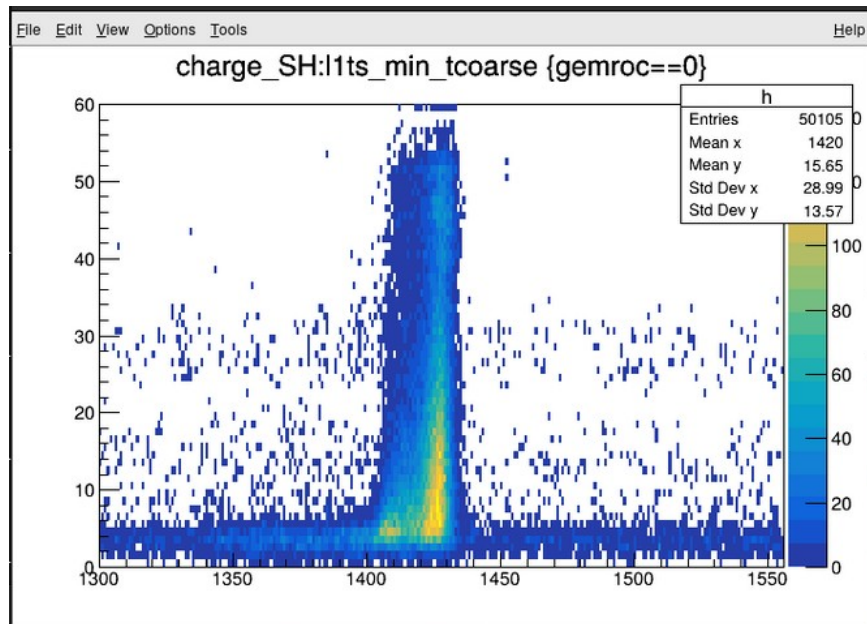
FEB ground connected via copper strips to transition board and to the uRWELL ground plane

Noise level compatible with planar GEMs

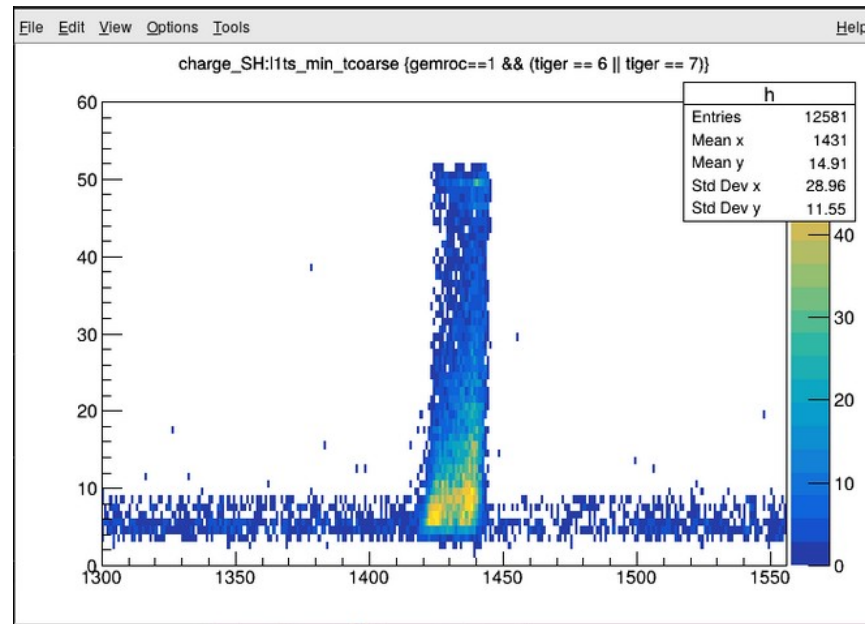
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Selected results



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(1.5/3/3/5 and GEM @ 370 V)

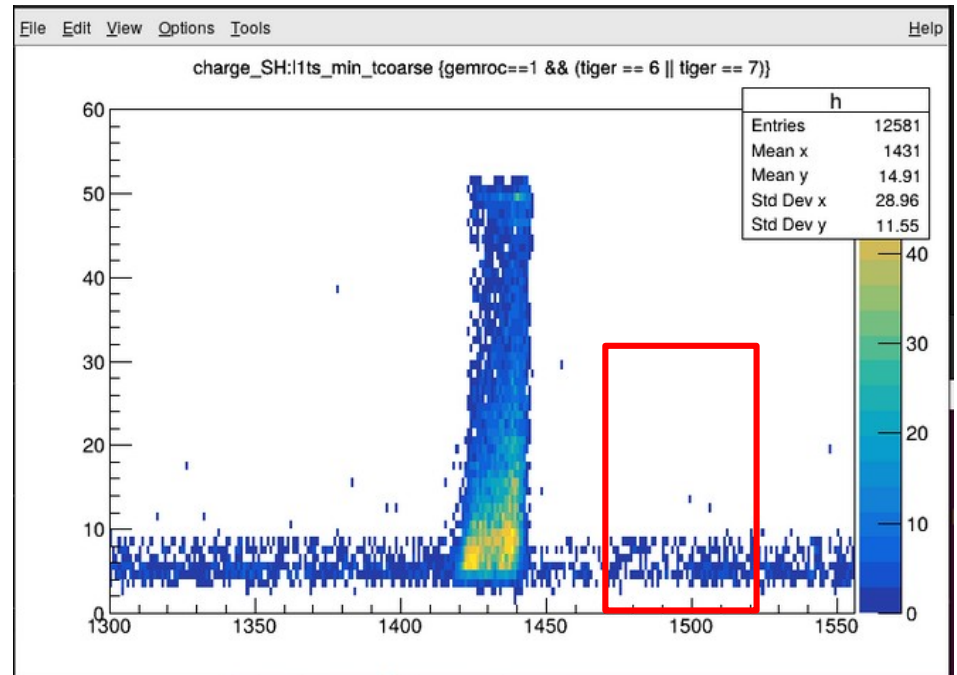


uRWELL
TOP = 550 V,
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Estimated noise

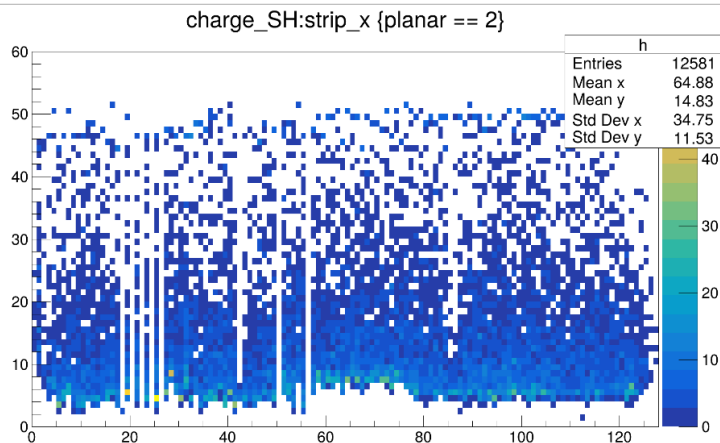
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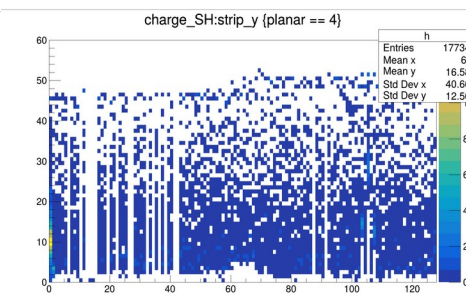
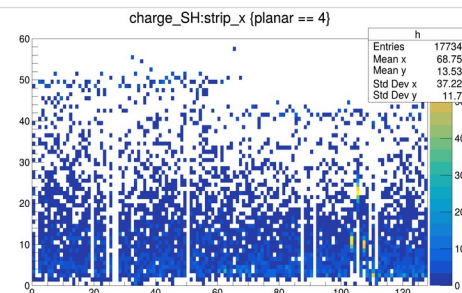
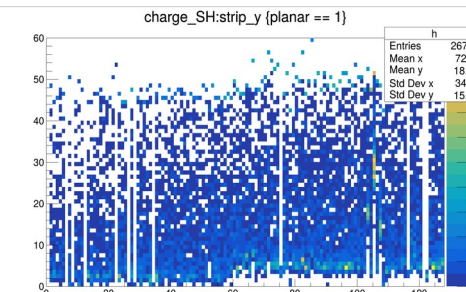
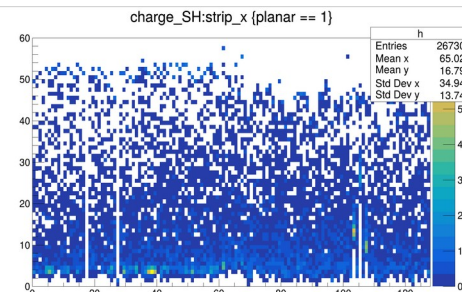
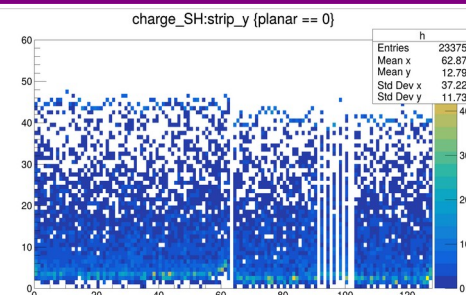
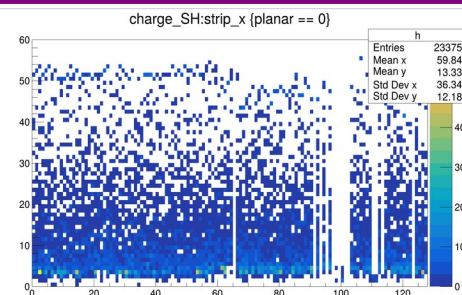
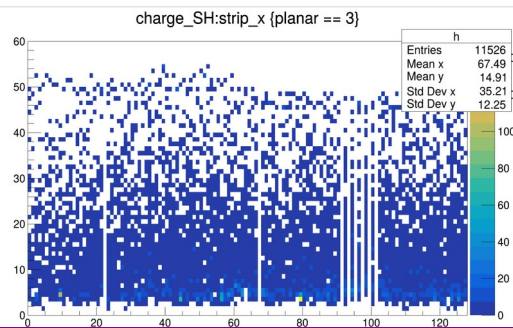


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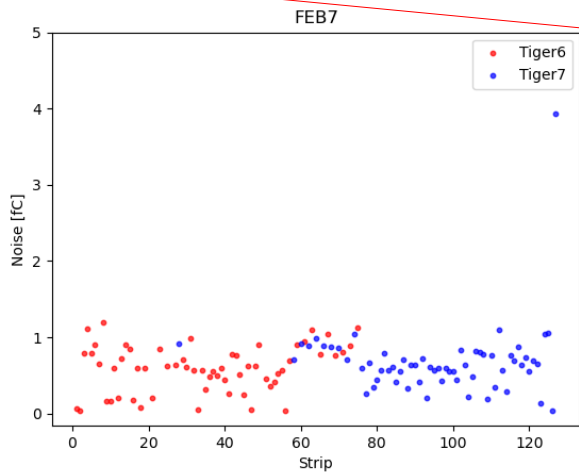
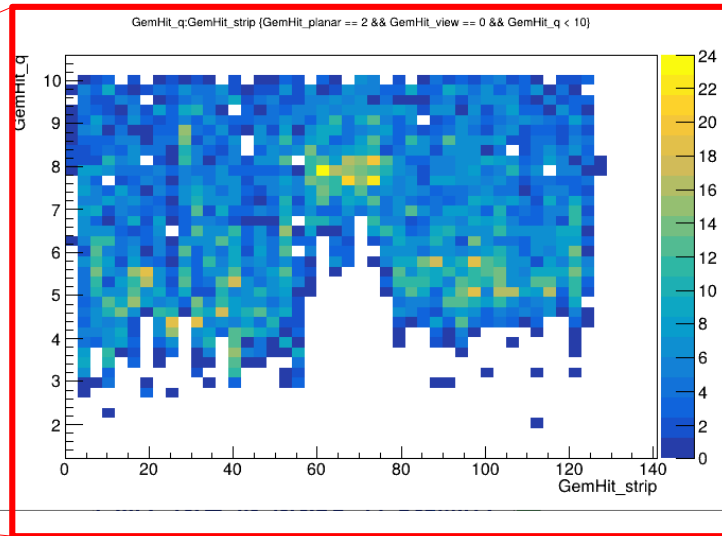
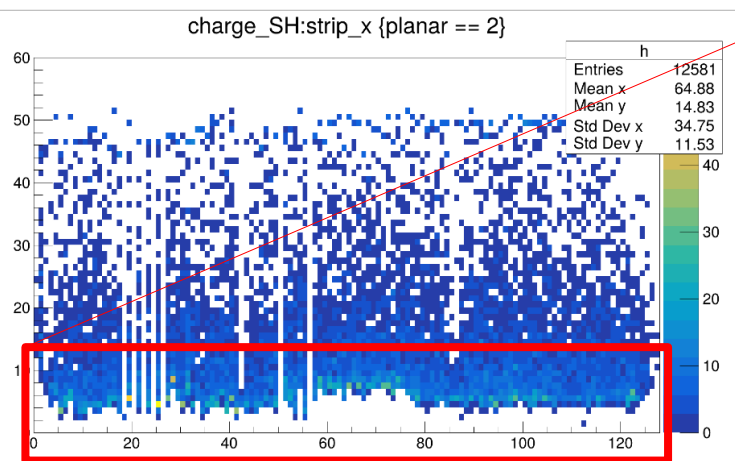
Charge vs strip



Trackers

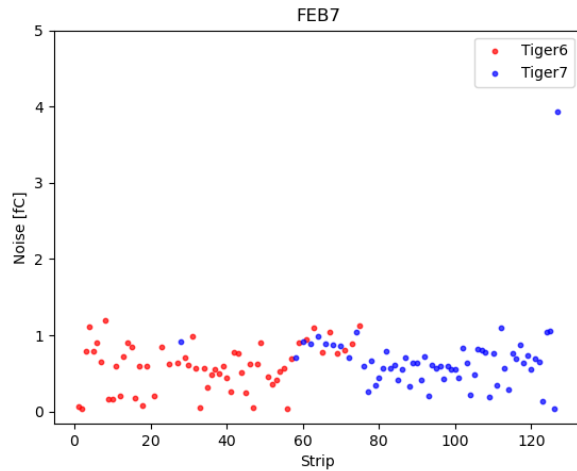
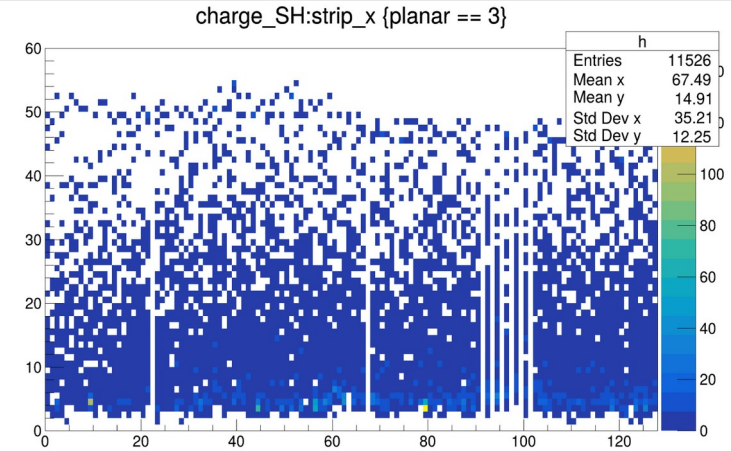
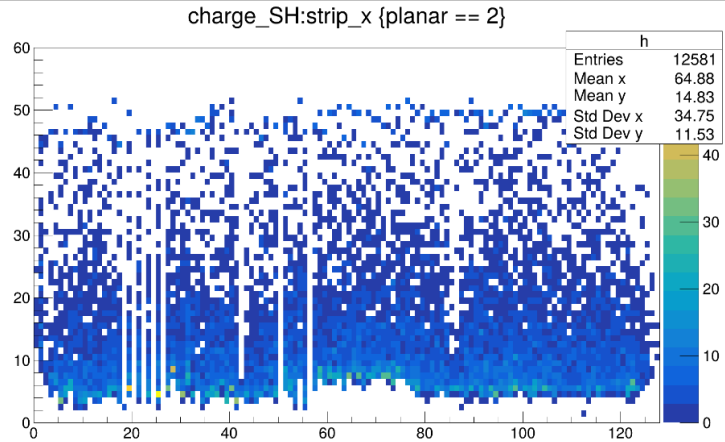


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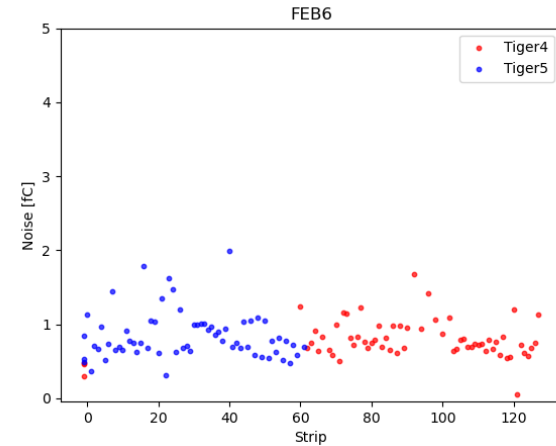


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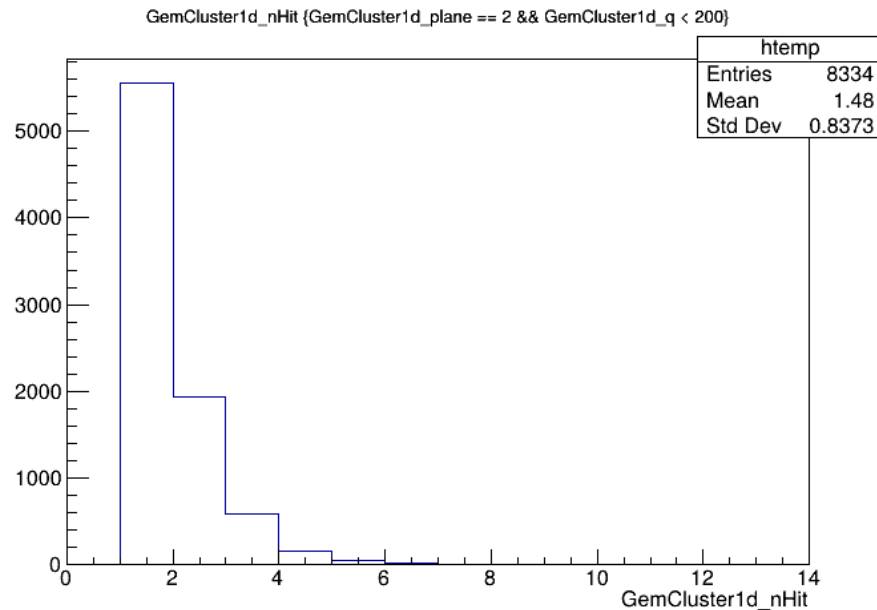
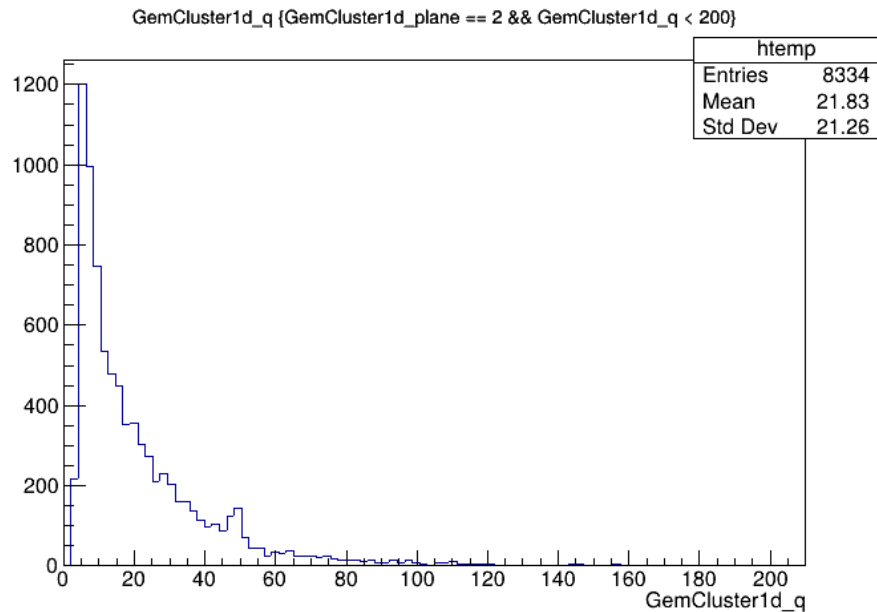
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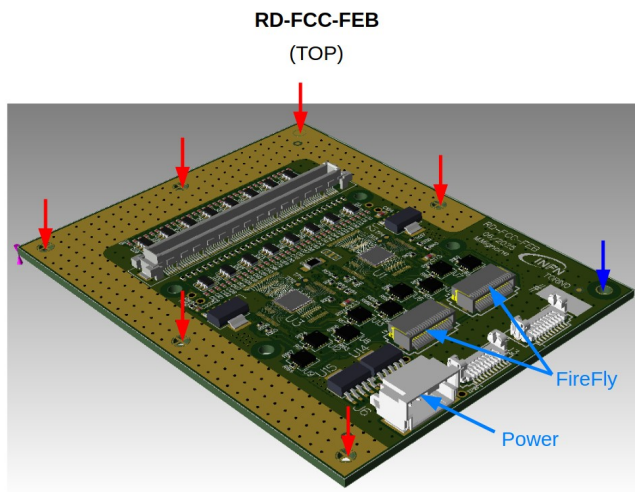
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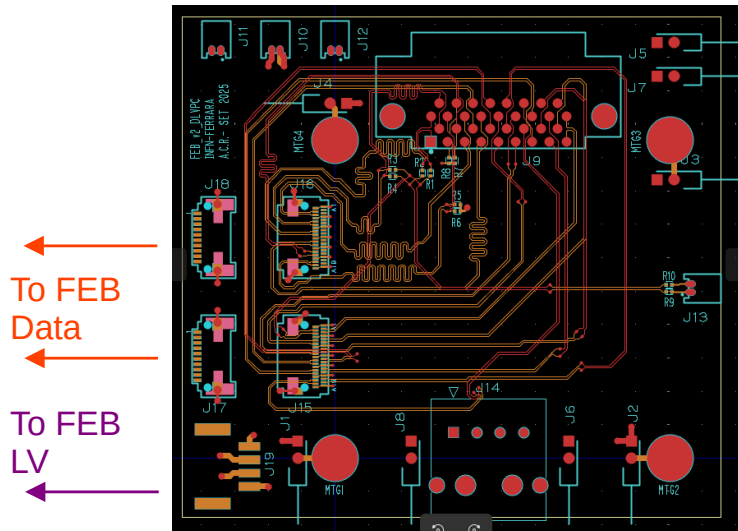
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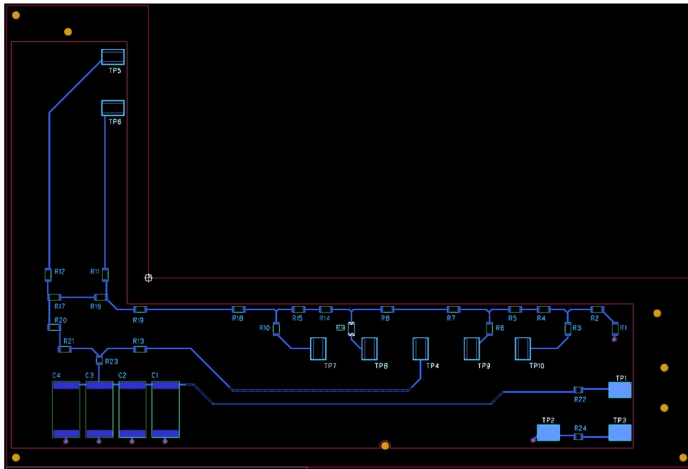
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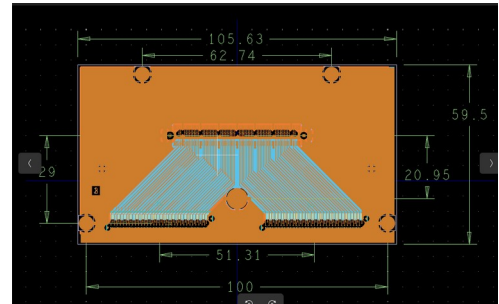
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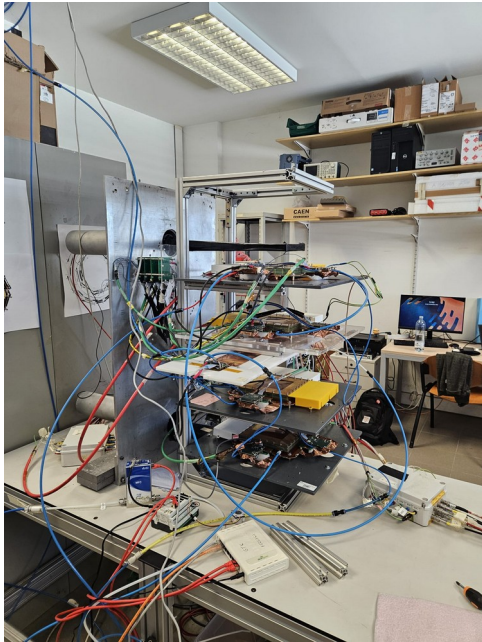


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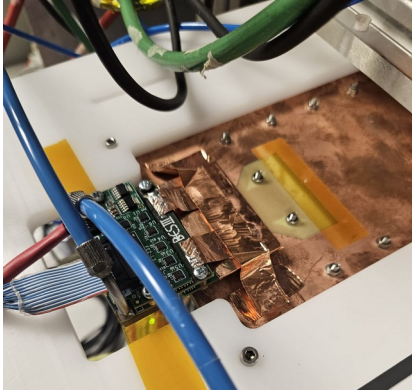
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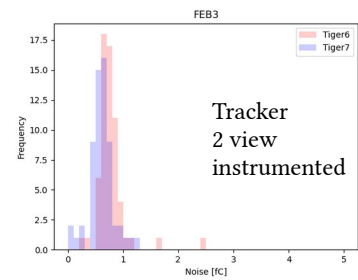
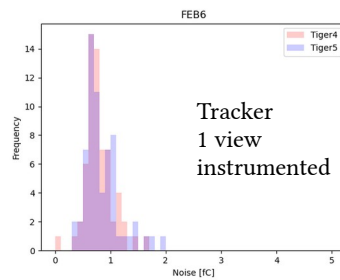
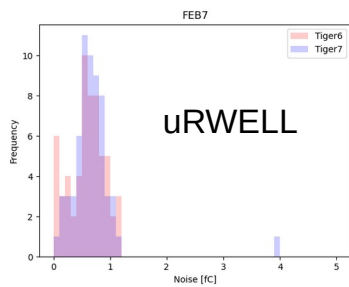


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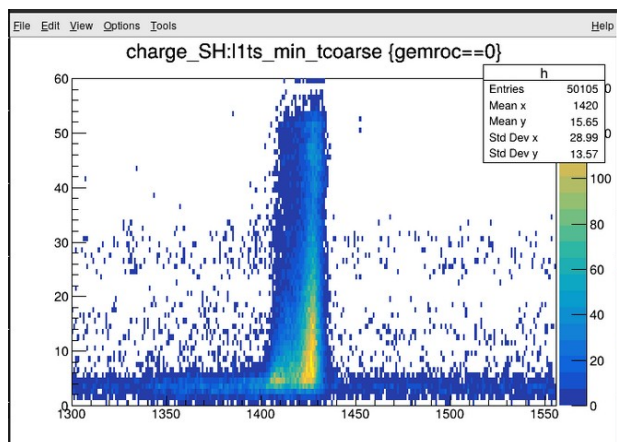
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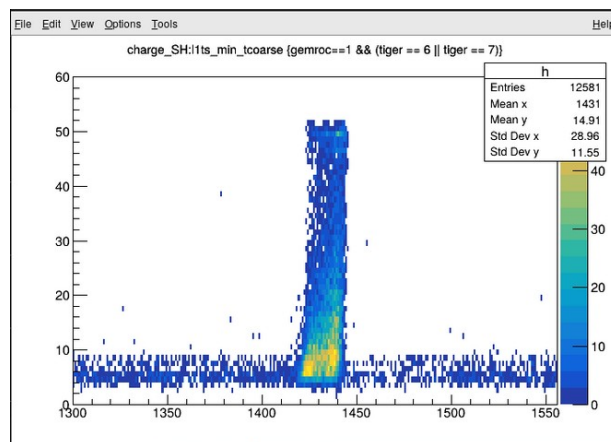
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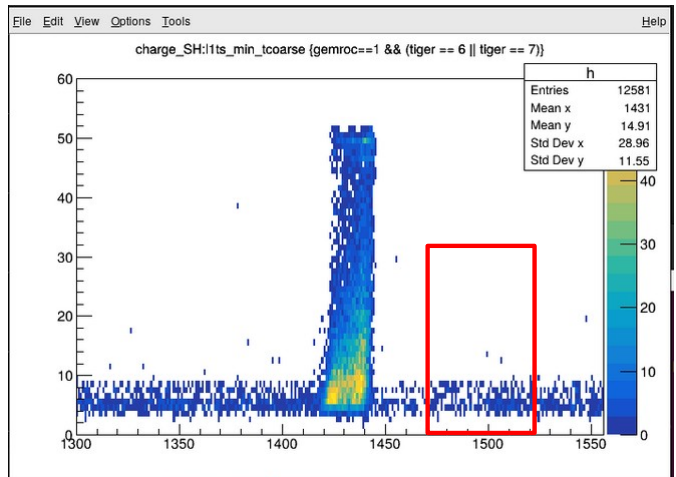
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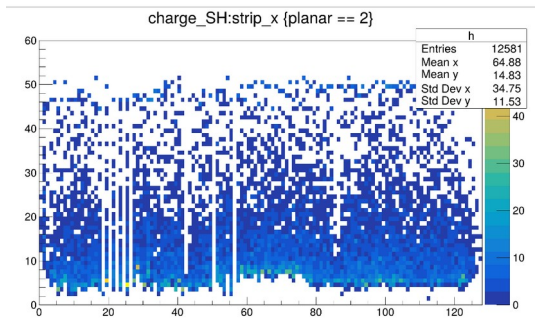
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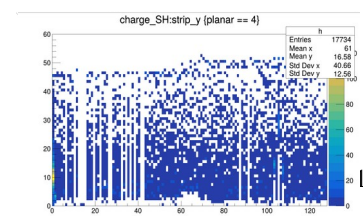
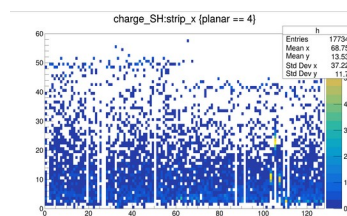
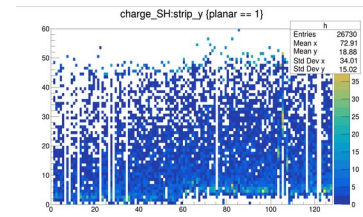
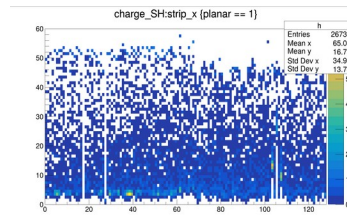
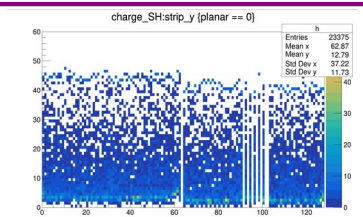
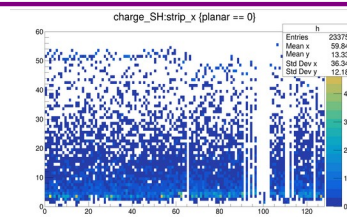
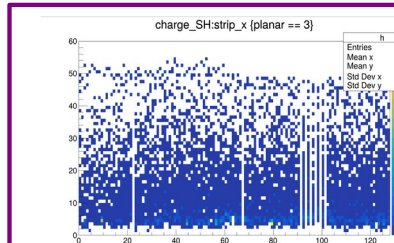


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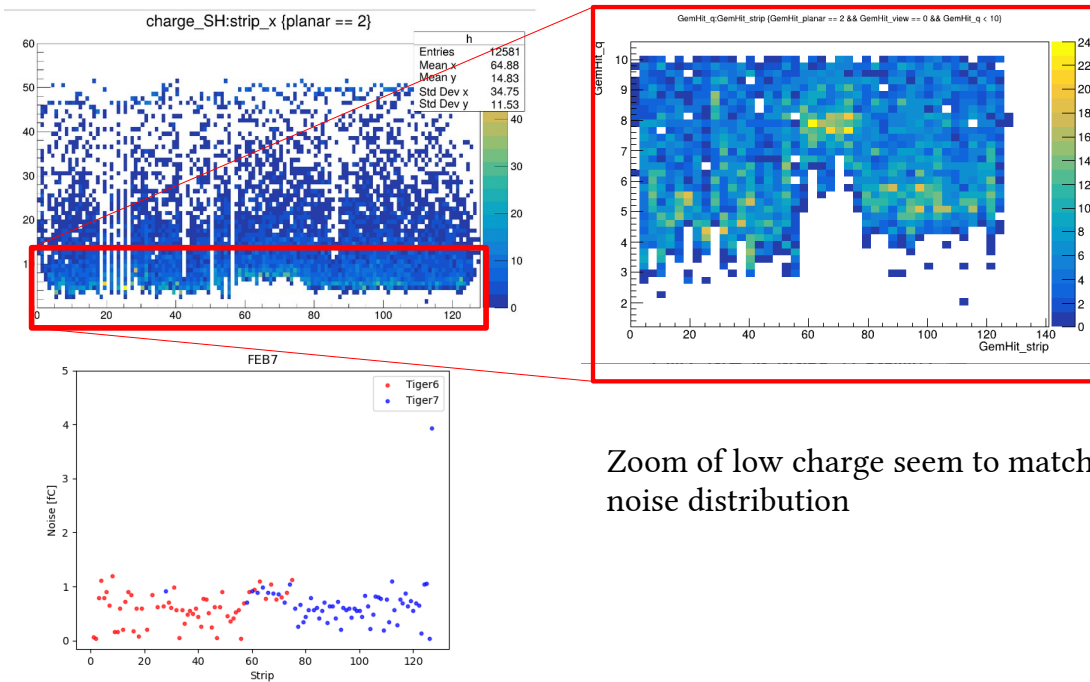
Charge vs strip



Trackers

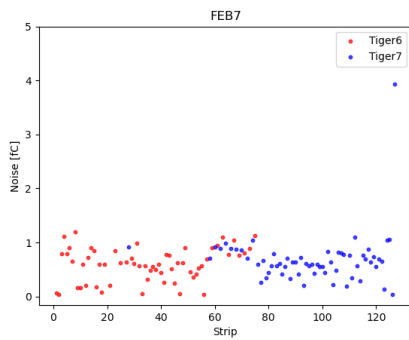
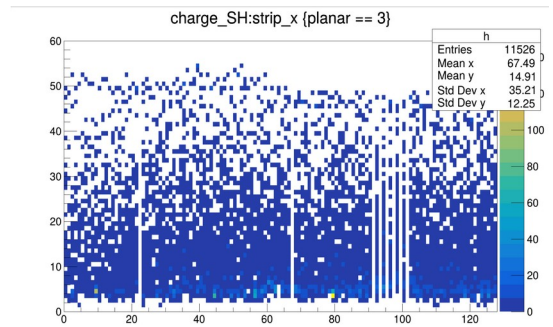
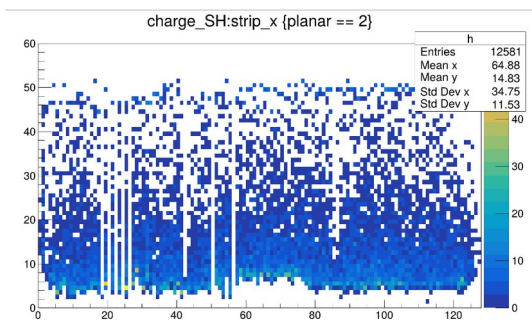


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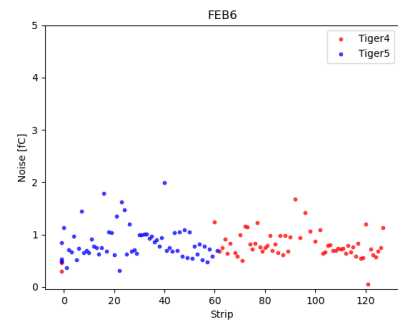


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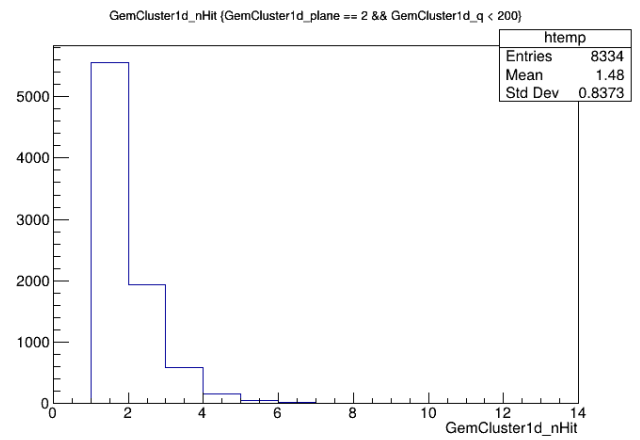
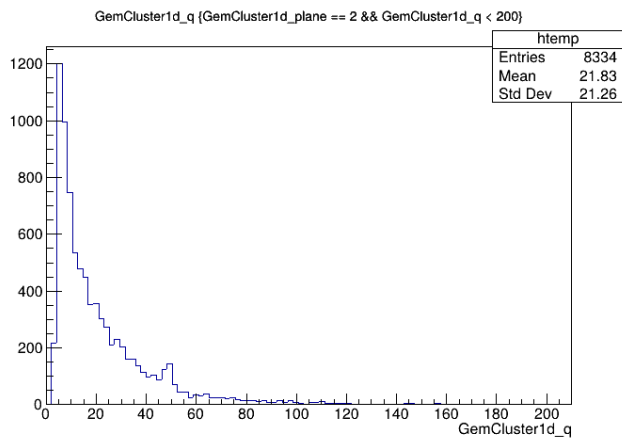
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