

# FCAL energy calibration QC

Igal Jaegle

Thomas Jefferson National Accelerator Facility

for the GlueX Collaboration

April 23, 2025

2025-01-period-8-iteration-1-method-2

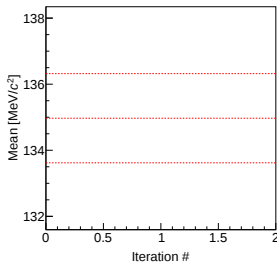


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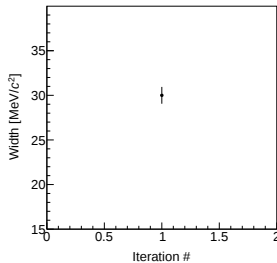
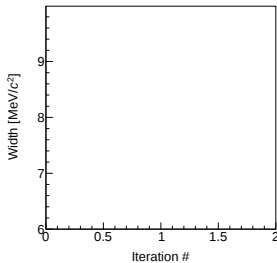
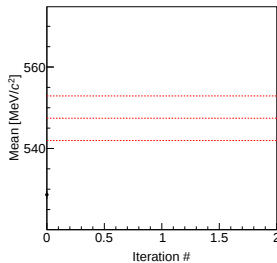
- 1 Overall QC
- 2 QC per rings

# Overall QC vs iteration

●  $\pi^0$

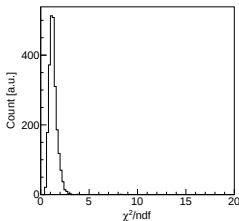


●  $\eta$

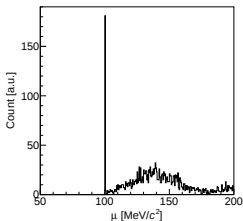


# Overall QC, summary distributions

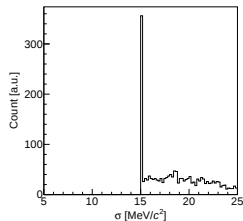
•  $\chi^2$  distribution



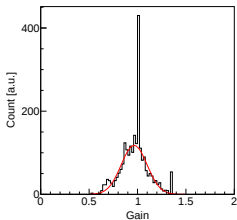
• Fitted peak distribution



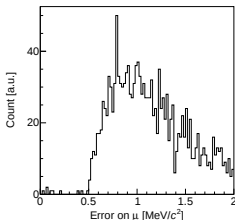
• Fitted width distribution



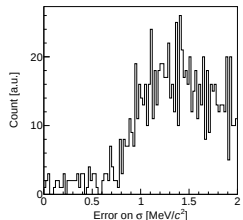
• Gain distribution



• Fitted peak error distribution

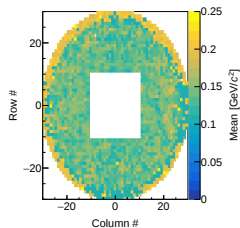


• Fitted width error distribution

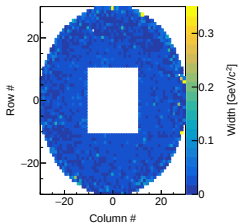


# Overall QC, summary maps

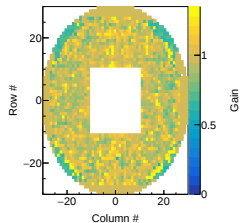
● Fitted peak map



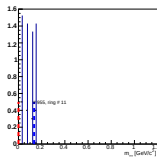
● Fitted width map



● Gain map



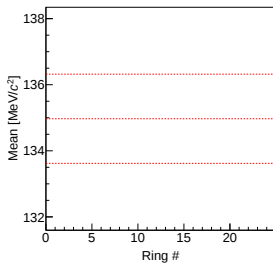
# Overall QC, bad channels



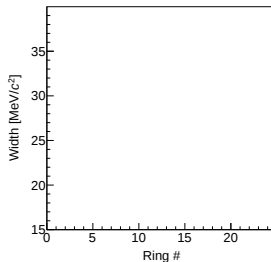
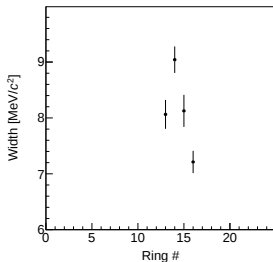
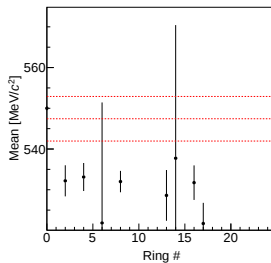
# QC per rings

There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

●  $\pi^0$



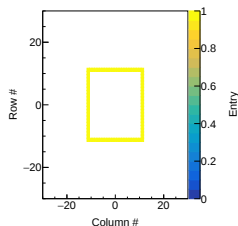
●  $\eta$



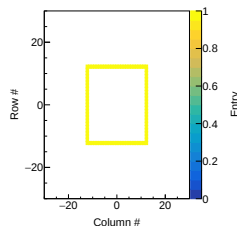
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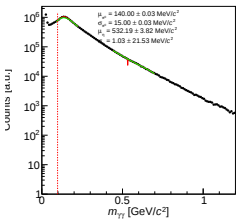
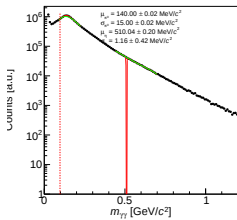
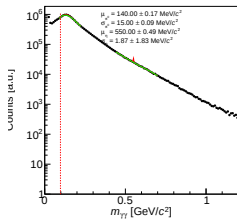
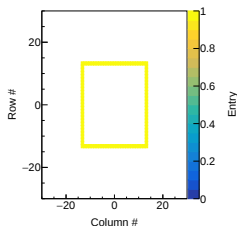
● Ring 0



● Ring 1



● Ring 2



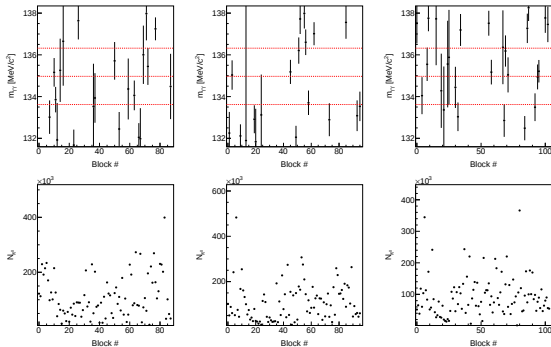
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There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

● Ring 0

● Ring 1

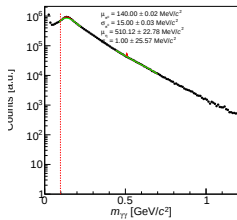
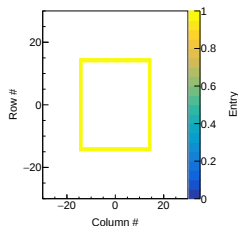
● Ring 2



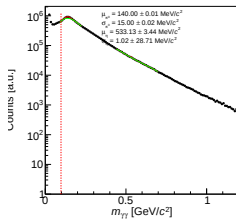
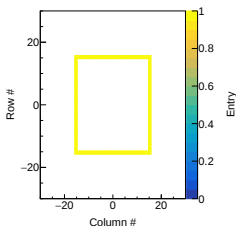
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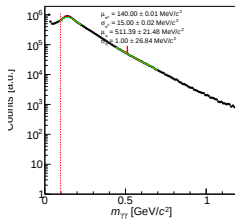
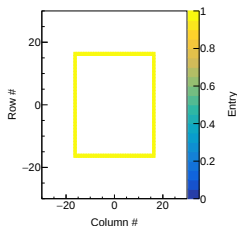
● Ring 3



● Ring 4



● Ring 5



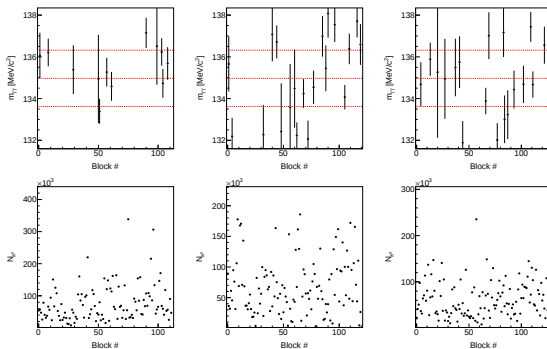
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● Ring 3

● Ring 4

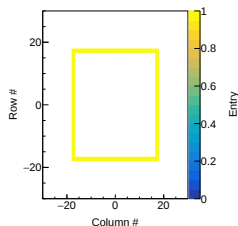
● Ring 5



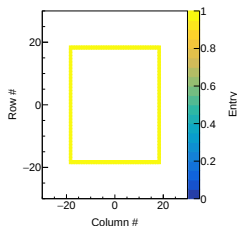
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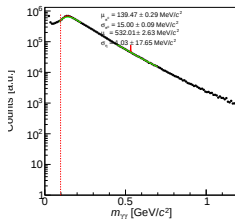
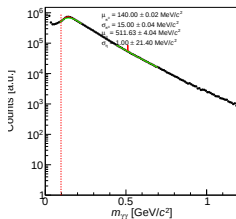
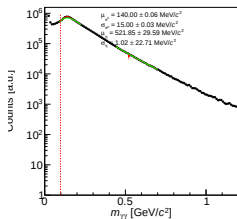
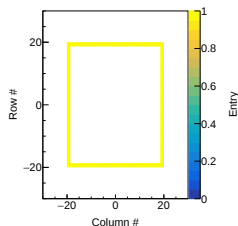
● Ring 6



● Ring 7



● Ring 8



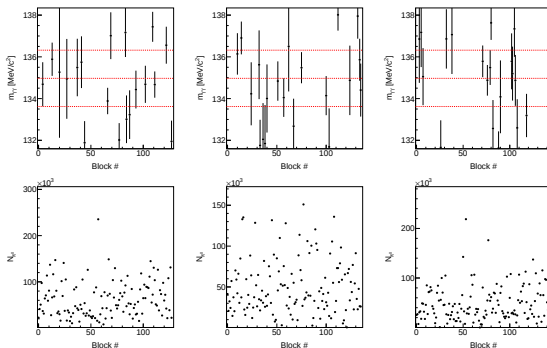
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There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

● Ring 6

● Ring 7

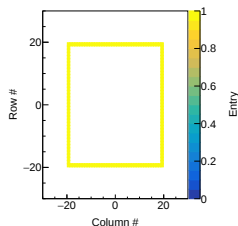
● Ring 8



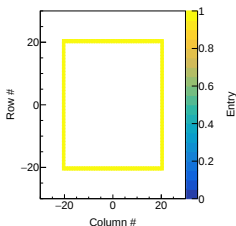
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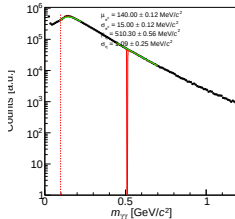
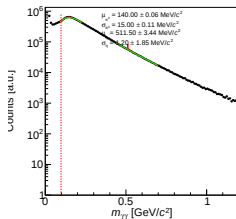
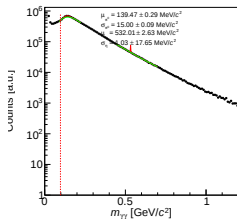
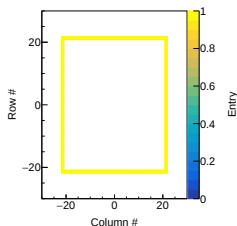
● Ring 8



● Ring 9



● Ring 10



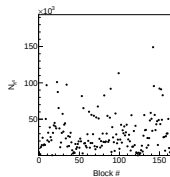
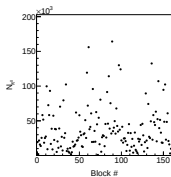
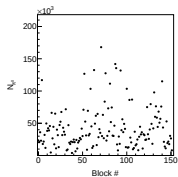
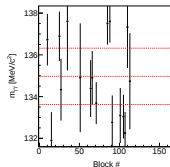
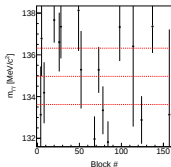
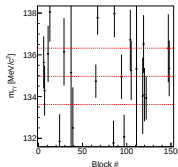
# QC per rings

There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

● Ring 8

● Ring 9

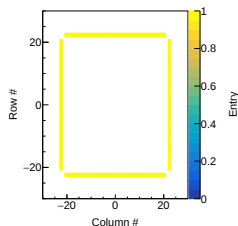
● Ring 10



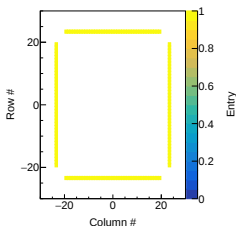
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There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

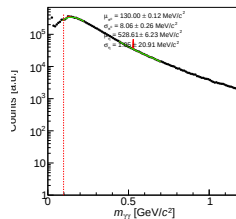
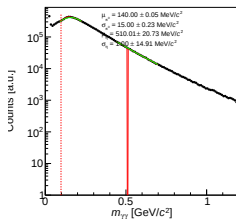
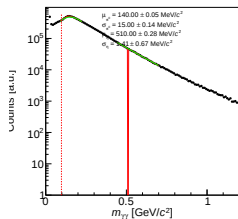
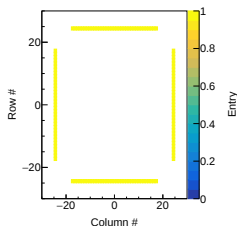
● Ring 11



● Ring 12



● Ring 13



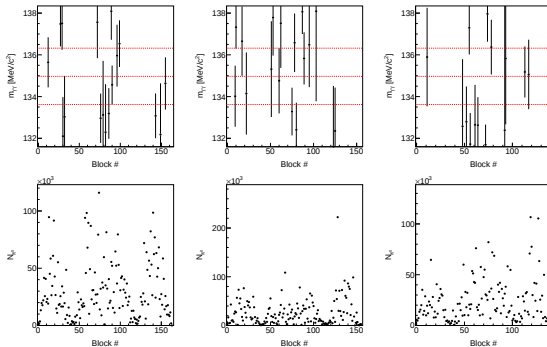
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There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

● Ring 11

● Ring 12

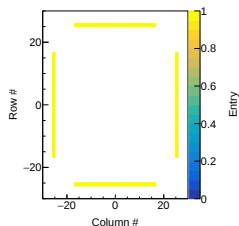
● Ring 13



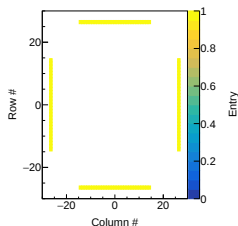
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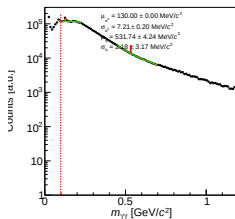
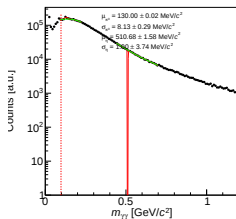
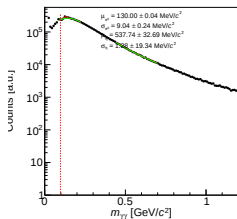
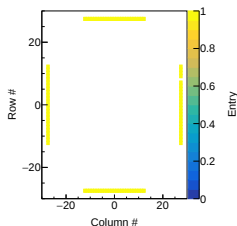
● Ring 14



● Ring 15



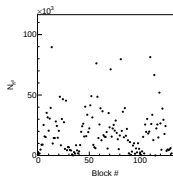
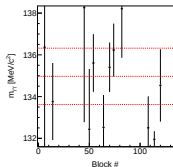
● Ring 16



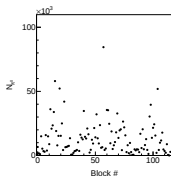
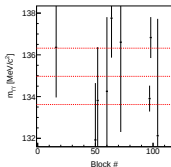
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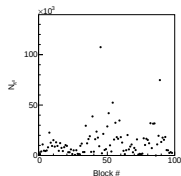
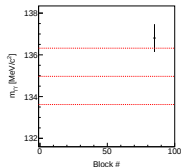
● Ring 14



● Ring 15



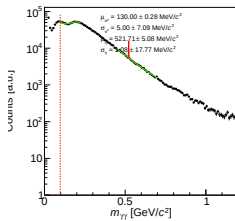
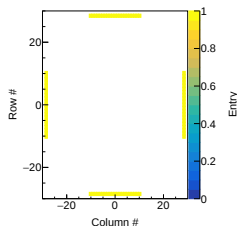
● Ring 16



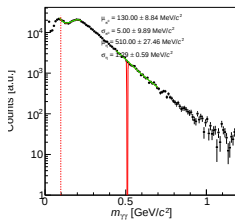
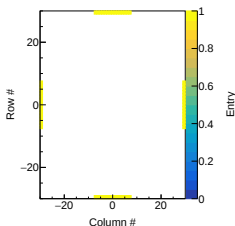
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There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

● Ring 17



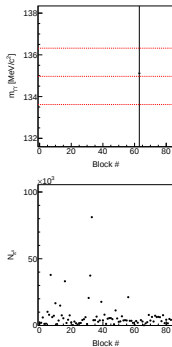
● Ring 18



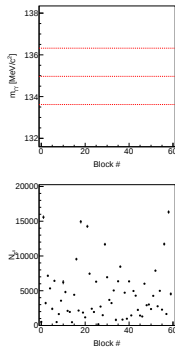
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There are 19 squared layers, from 0 to 18, but in reality from 11 to 29

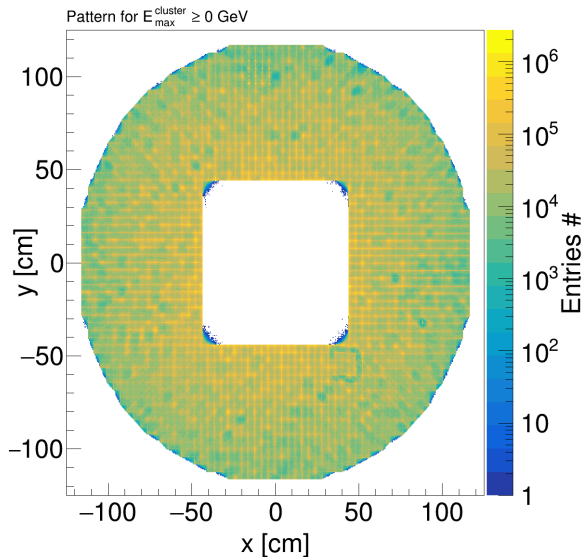
● Ring 17



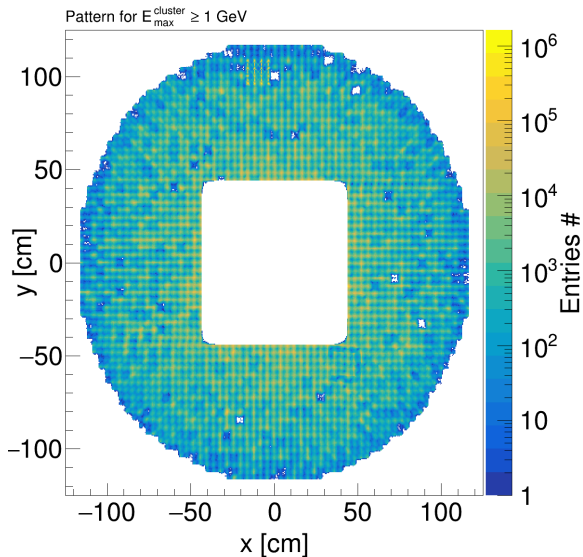
● Ring 18



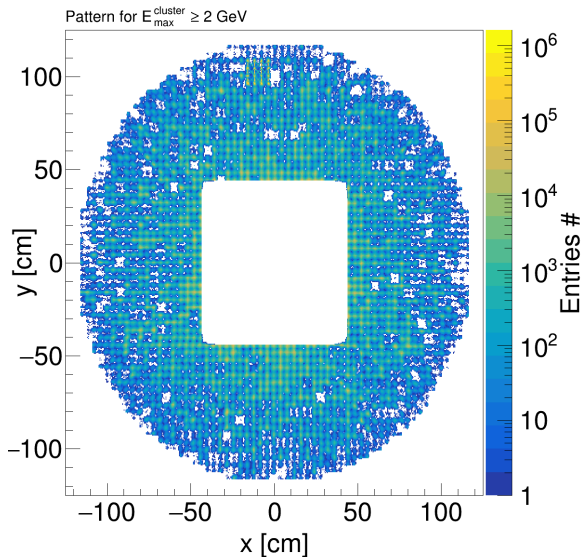
# FCAL pattern



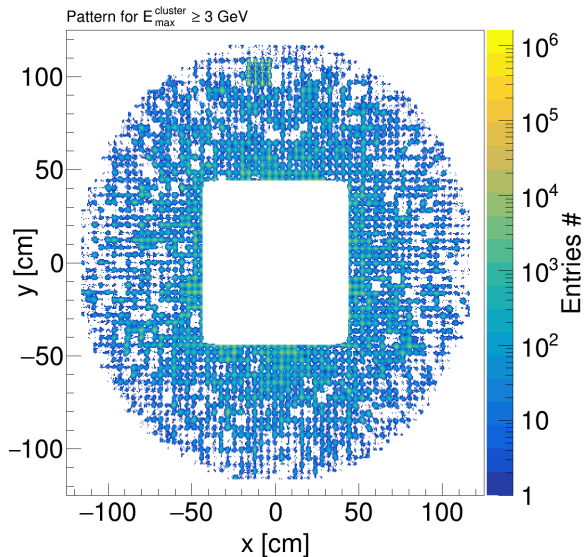
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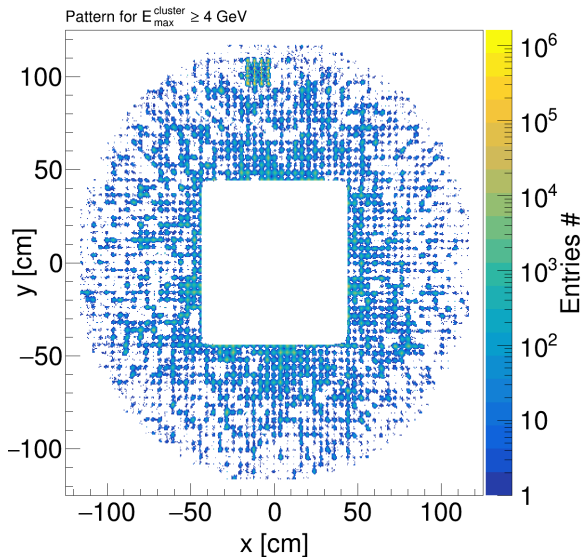
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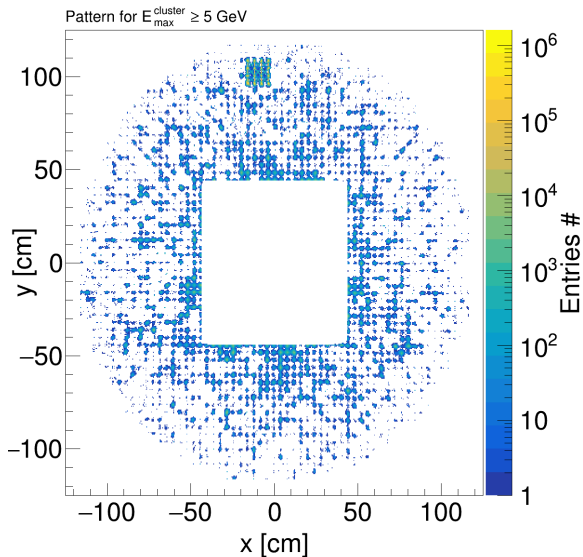
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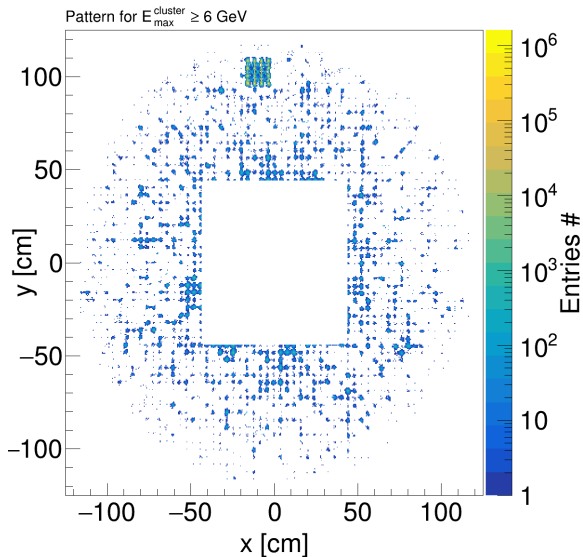
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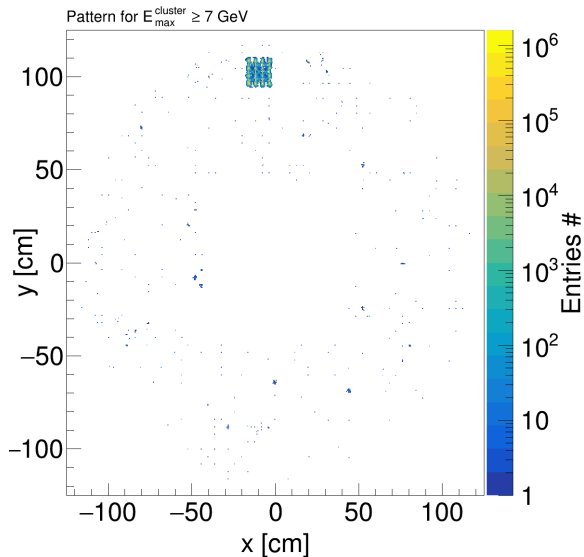
# FCAL pattern



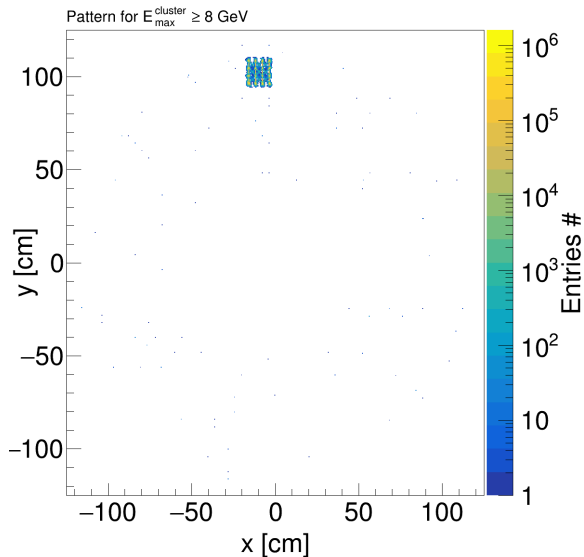
# FCAL pattern



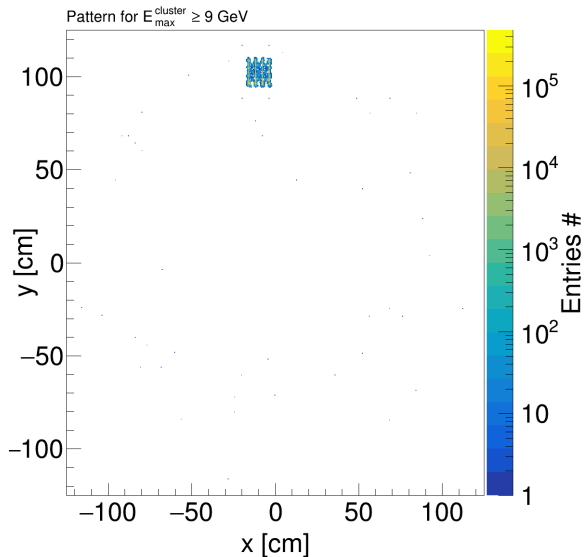
# FCAL pattern



# FCAL pattern



# FCAL pattern



# FCAL pattern

