

# FCAL energy calibration QC

Igal Jaeglé

Thomas Jefferson National Accelerator Facility

for the GlueX Collaboration

August 30, 2023  
2022-08-period-11-iteration-2-method-2

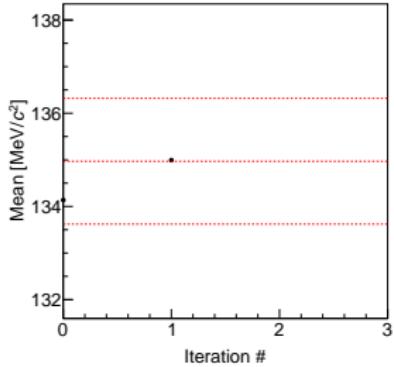


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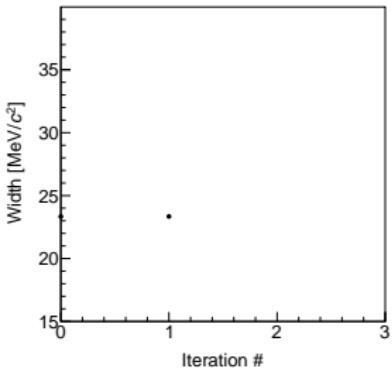
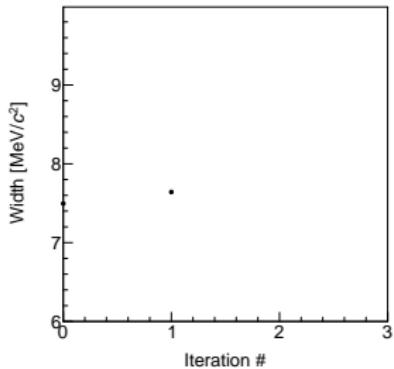
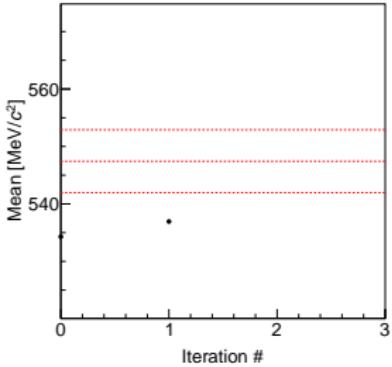
- 1 Overall QC
- 2 QC per rings

# Overall QC vs iteration

●  $\pi^0$

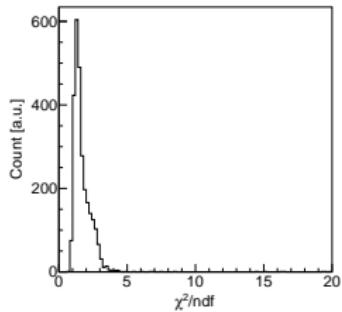


●  $\eta$

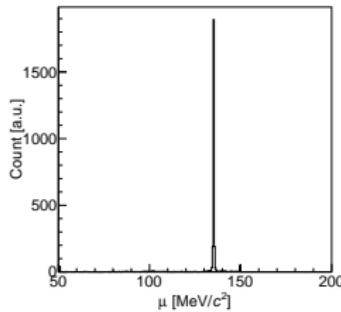


# Overall QC, summary distributions

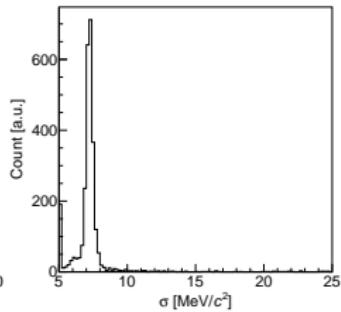
●  $\chi^2$  distribution



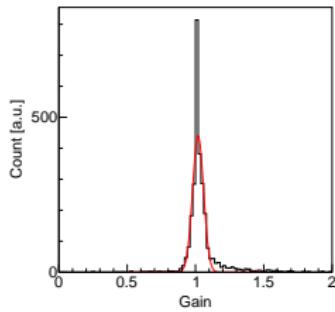
● Fitted peak distribution



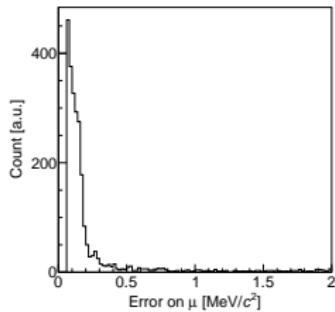
● Fitted width distribution



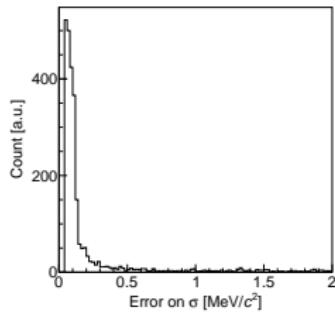
● Gain distribution



● Fitted peak error distribution

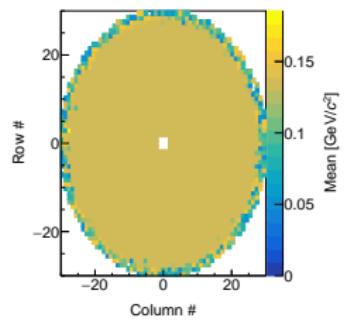


● Fitted width error distribution

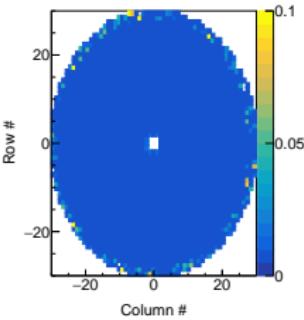


# Overall QC, summary maps

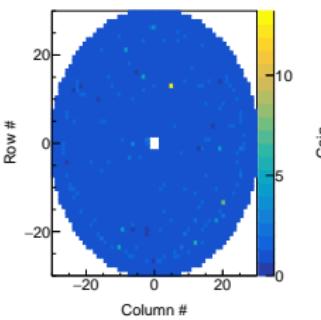
● Fitted peak map



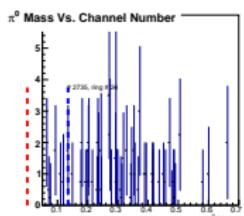
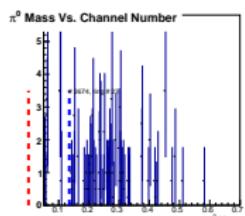
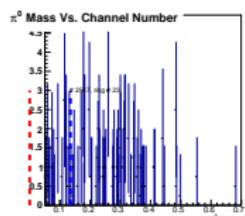
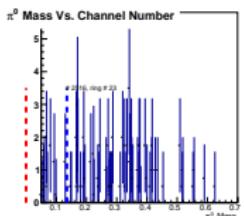
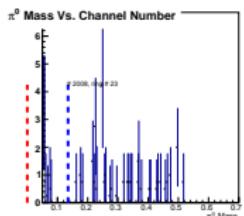
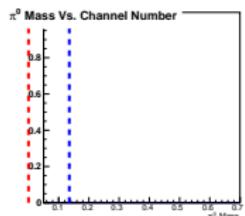
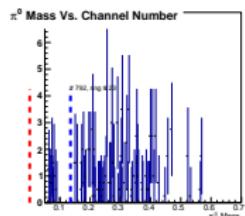
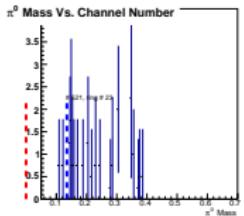
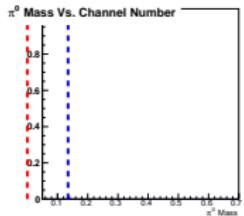
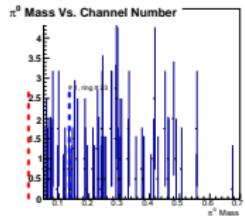
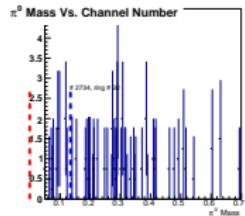
● Fitted width map



● Gain map



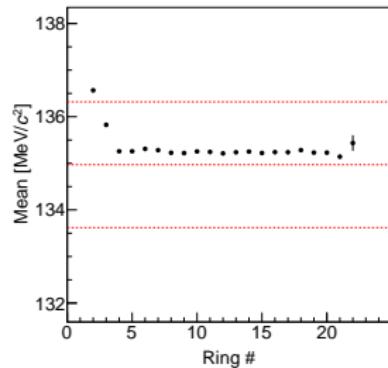
# Overall QC, bad channels



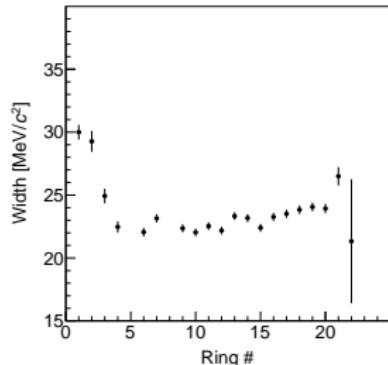
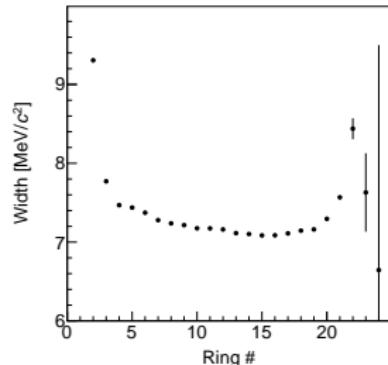
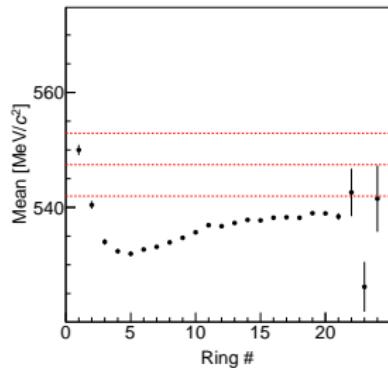
# QC per rings

If radius divided by 5 cm, there is 24 rings

●  $\pi^0$



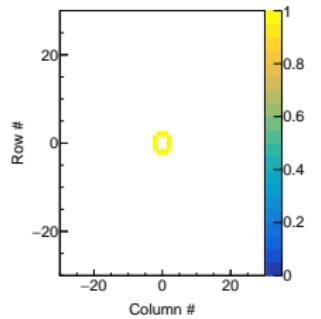
●  $\eta$



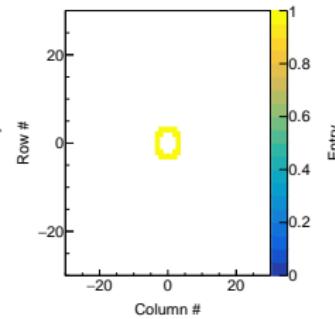
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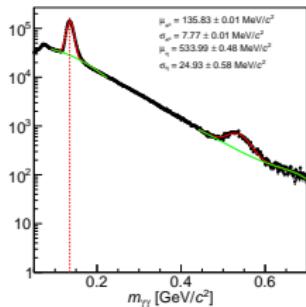
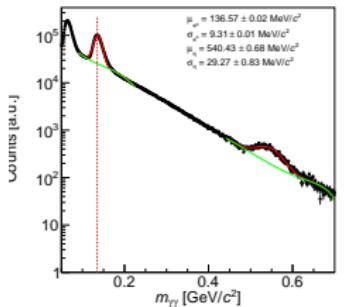
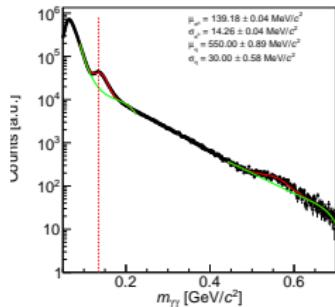
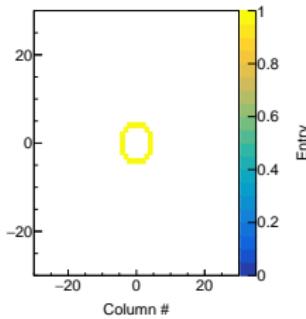
Ring 1



Ring 2



Ring 3



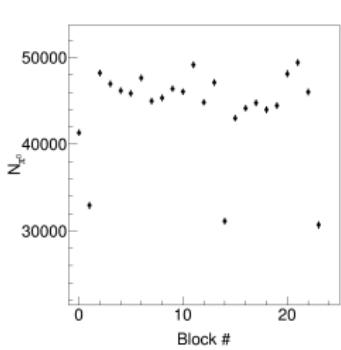
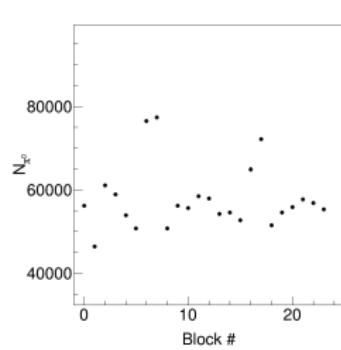
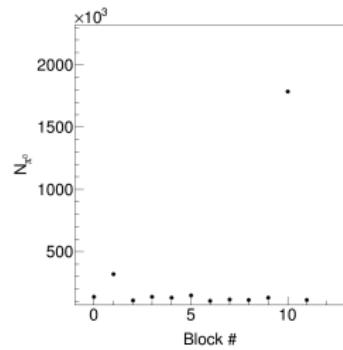
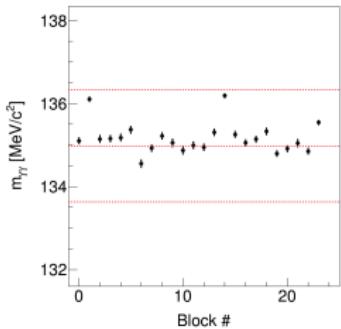
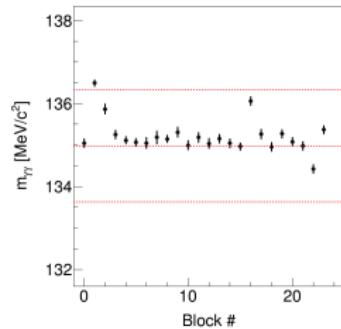
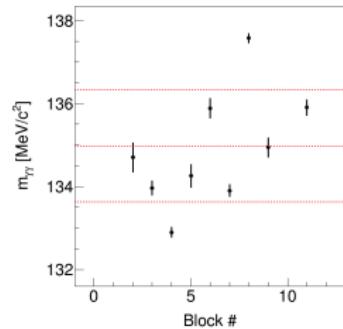
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● Ring 1

● Ring 2

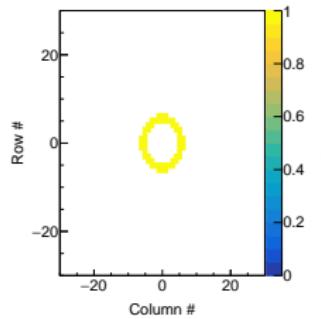
● Ring 3



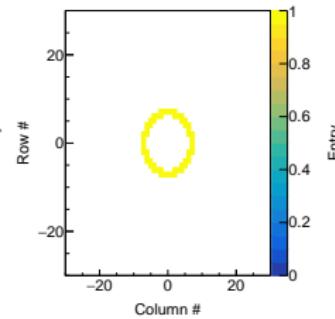
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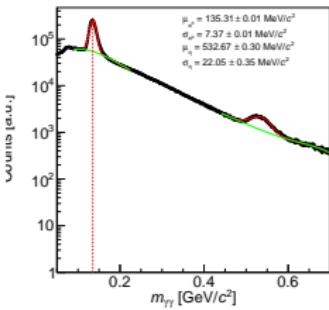
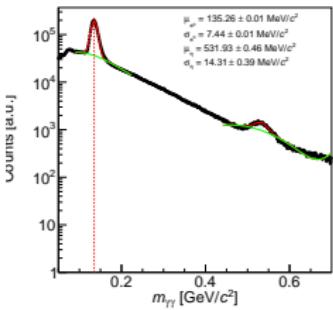
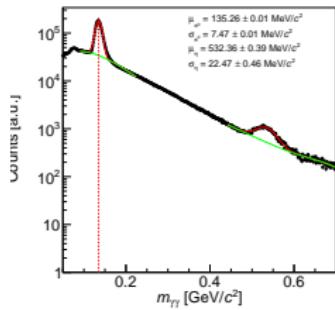
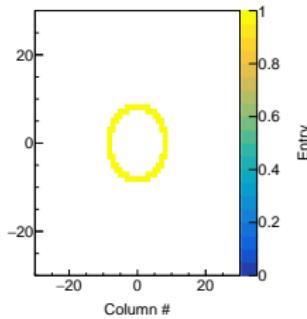
● Ring 4



● Ring 5



● Ring 6



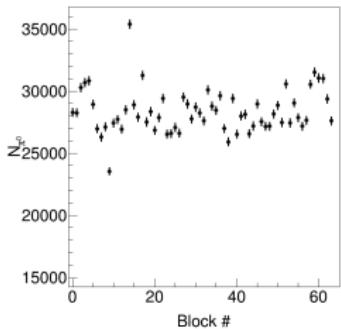
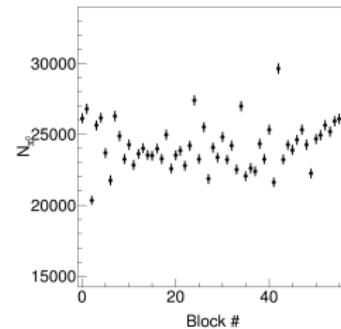
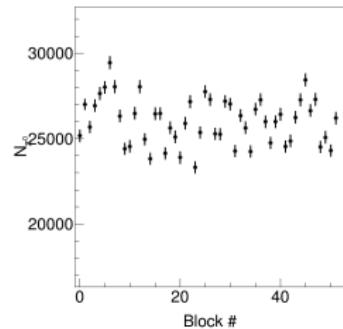
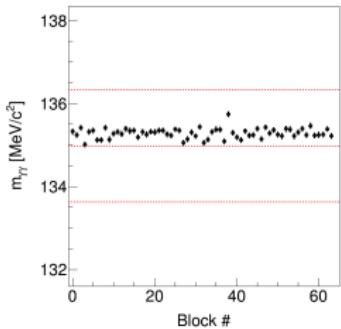
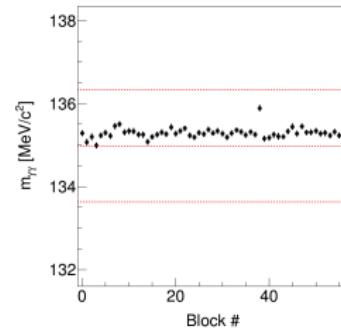
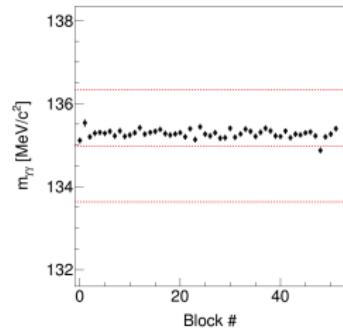
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● Ring 4

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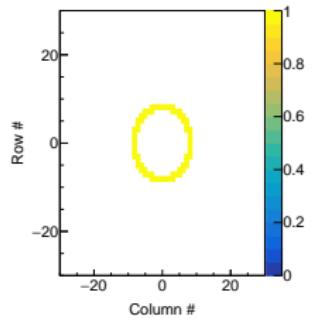
● Ring 6



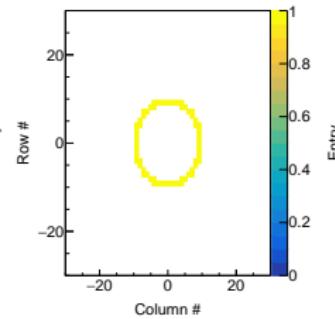
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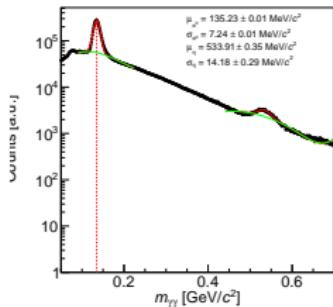
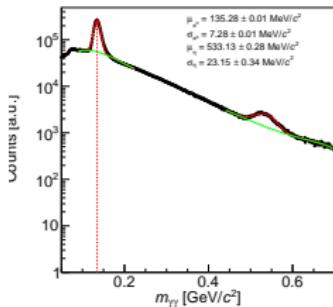
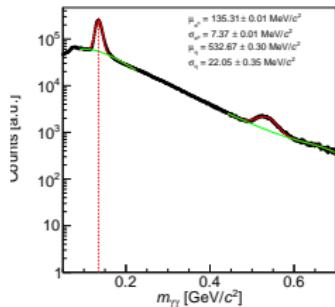
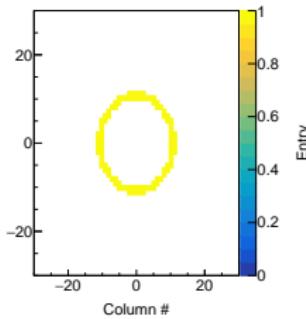
● Ring 7



● Ring 8



● Ring 9



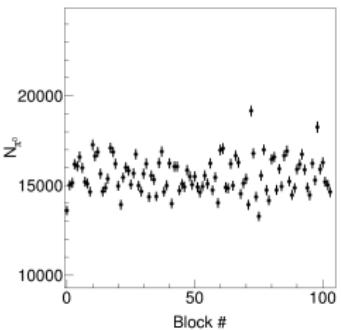
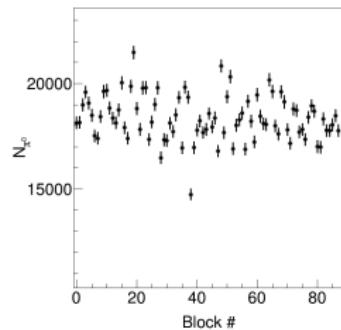
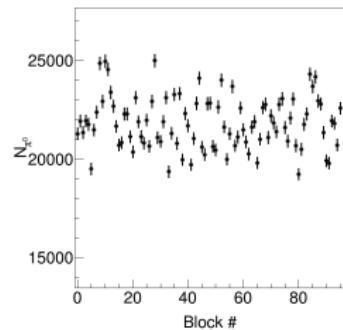
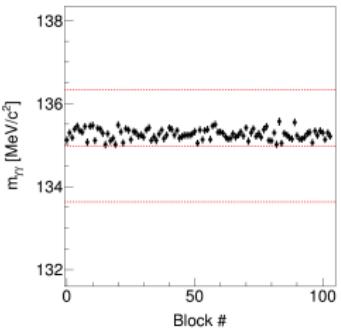
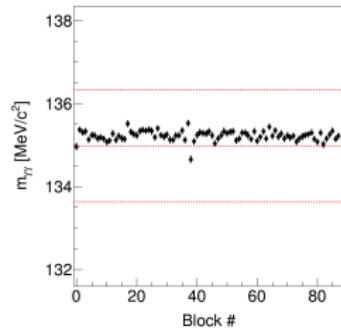
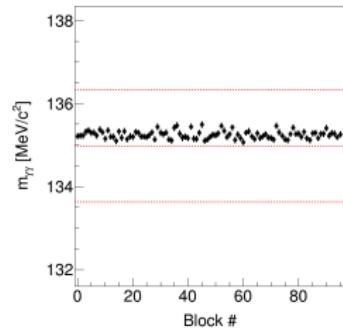
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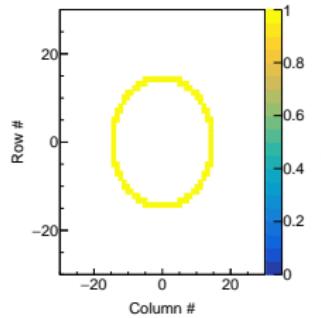
● Ring 9



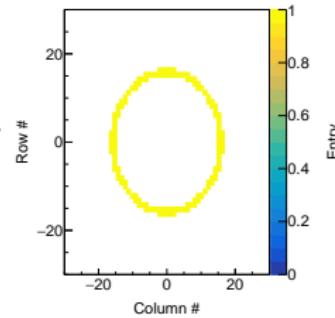
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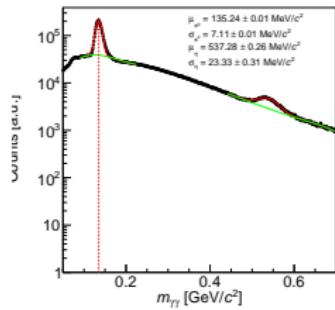
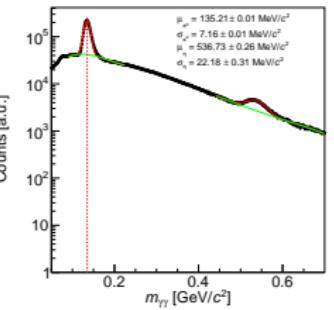
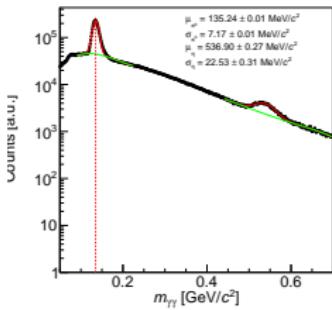
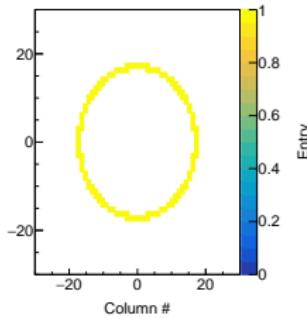
● Ring 11



● Ring 12



● Ring 13



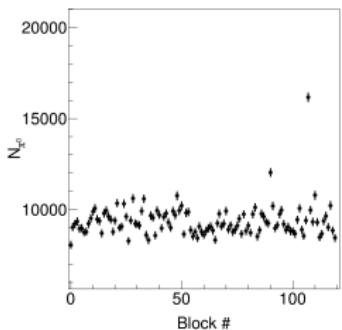
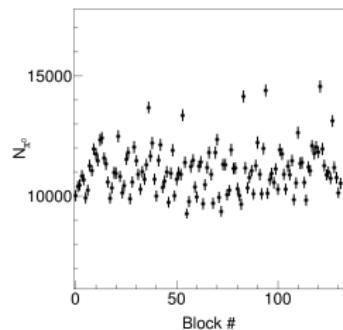
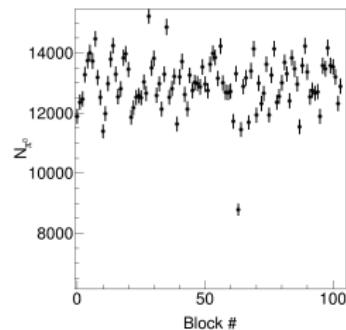
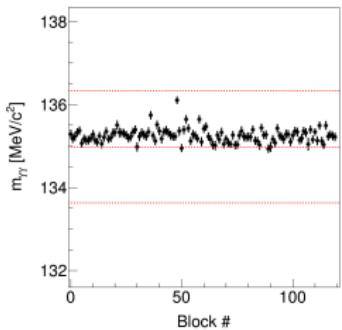
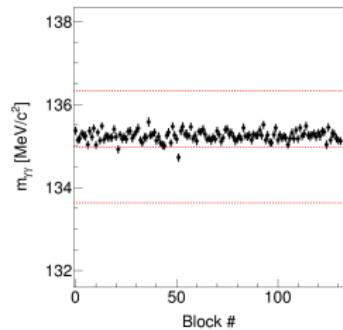
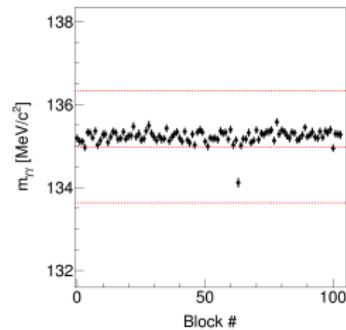
# QC per rings

If radius divided by 5 cm, there is 24 rings

● Ring 11

● Ring 12

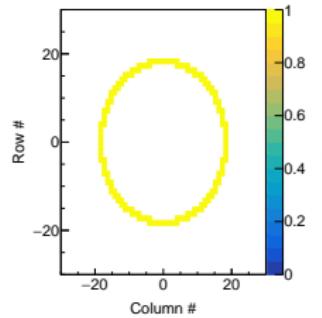
● Ring 13



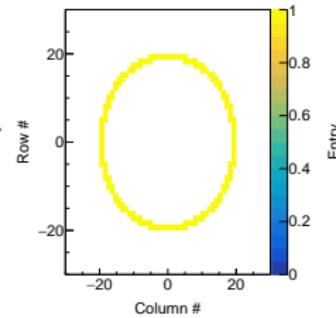
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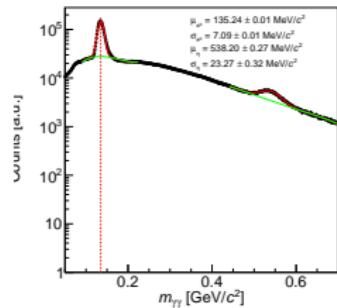
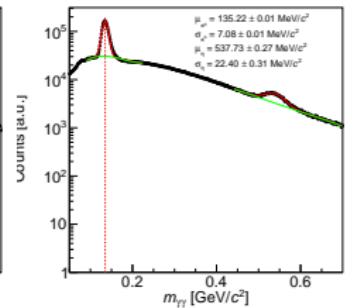
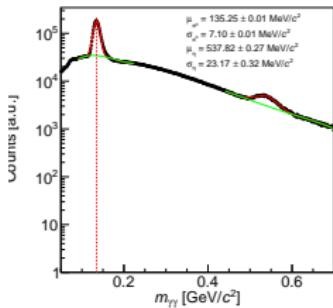
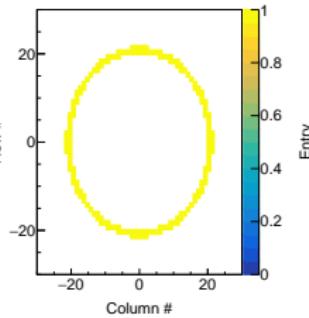
● Ring 14



● Ring 15



● Ring 16



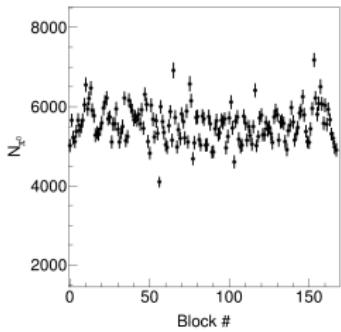
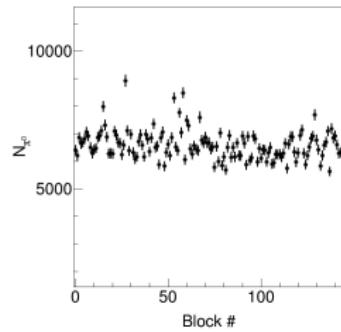
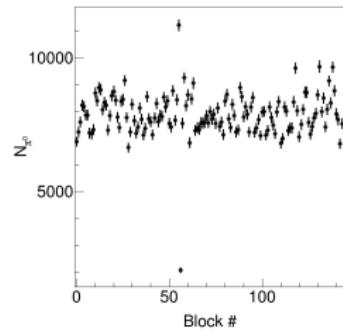
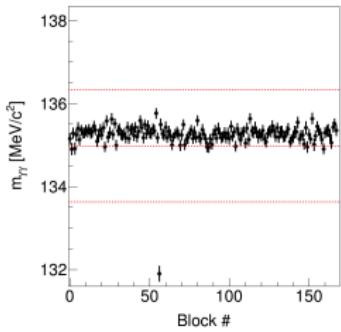
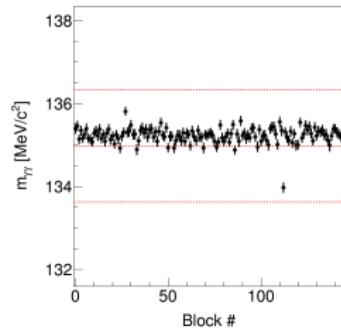
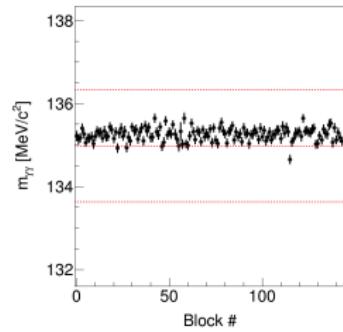
# QC per rings

If radius divided by 5 cm, there is 24 rings

● Ring 14

● Ring 15

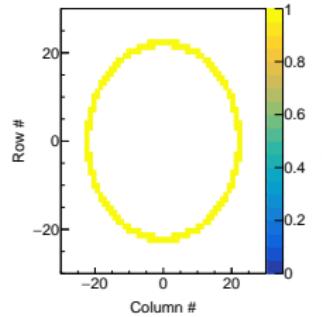
● Ring 16



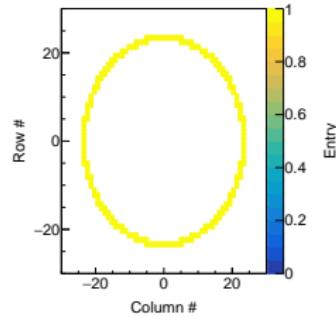
# QC per rings

If radius divided by 5 cm, there is 24 rings

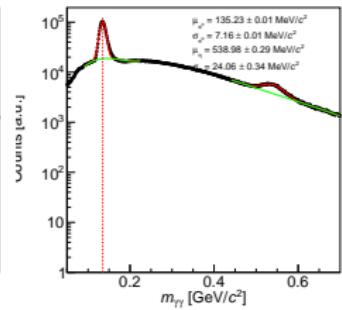
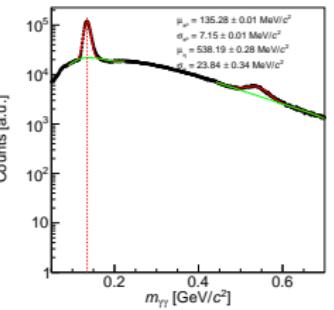
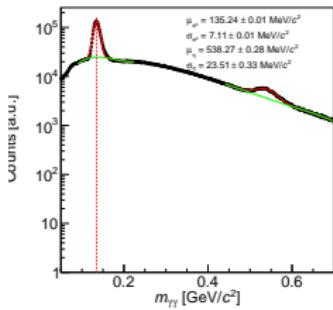
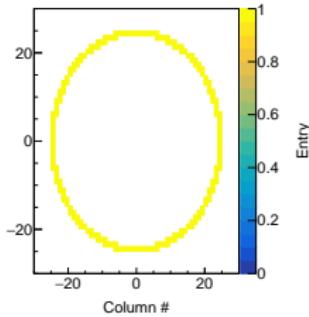
● Ring 17



● Ring 18



● Ring 19



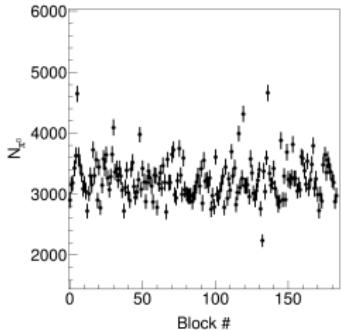
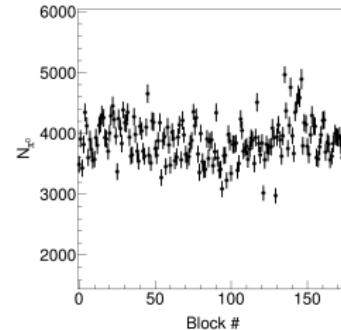
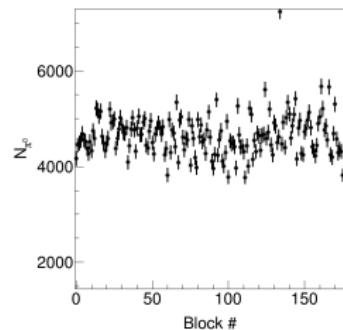
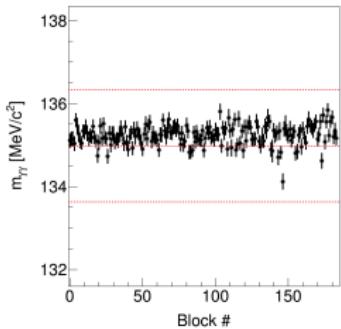
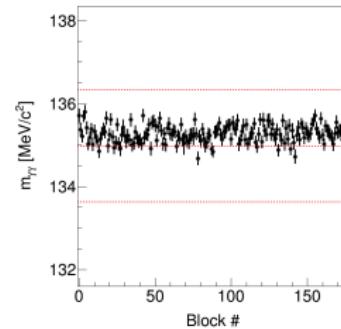
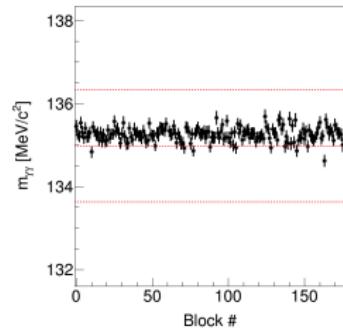
# QC per rings

If radius divided by 5 cm, there is 24 rings

● Ring 17

● Ring 18

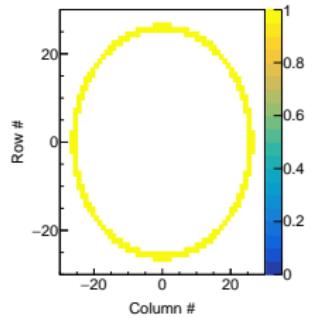
● Ring 19



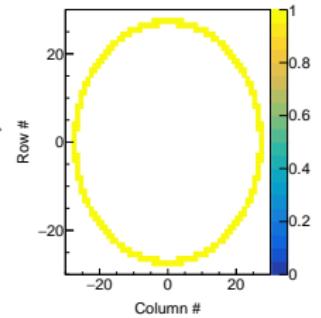
# QC per rings

If radius divided by 5 cm, there is 24 rings

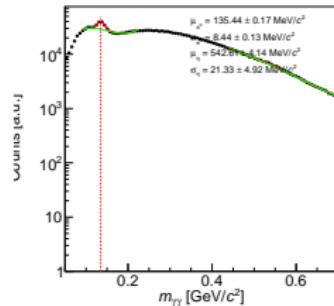
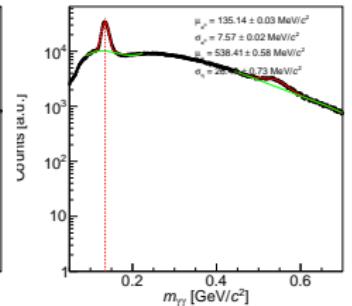
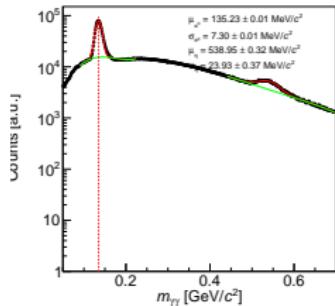
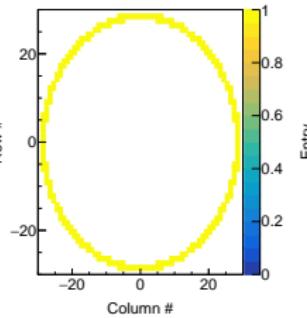
● Ring 20



● Ring 21



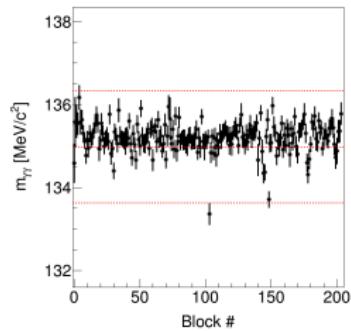
● Ring 22



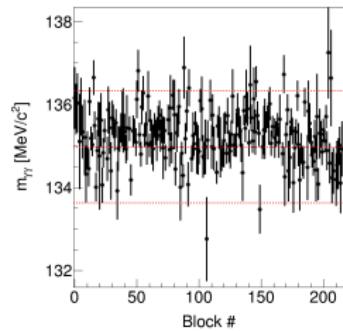
# QC per rings

If radius divided by 5 cm, there is 24 rings

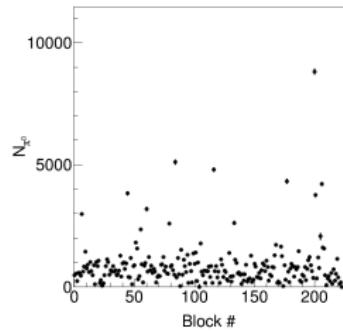
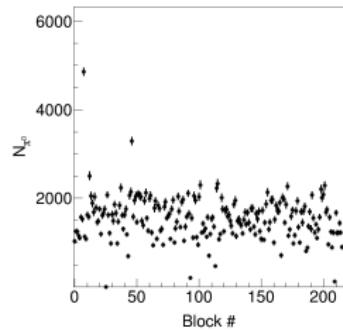
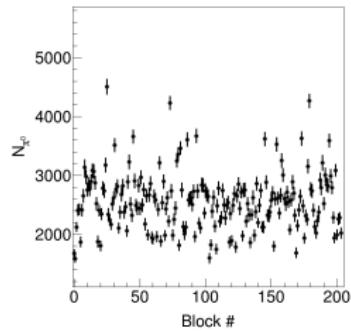
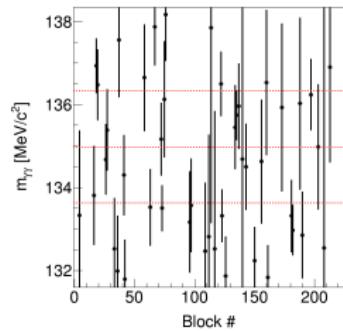
● Ring 20



● Ring 21



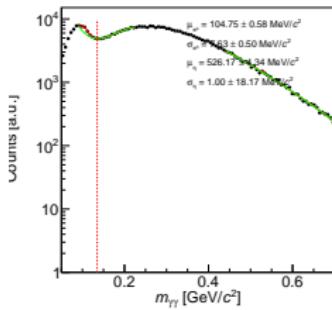
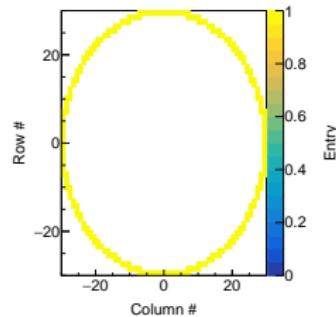
● Ring 22



# QC per rings

If radius divided by 5 cm, there is 24 rings

● Ring 23

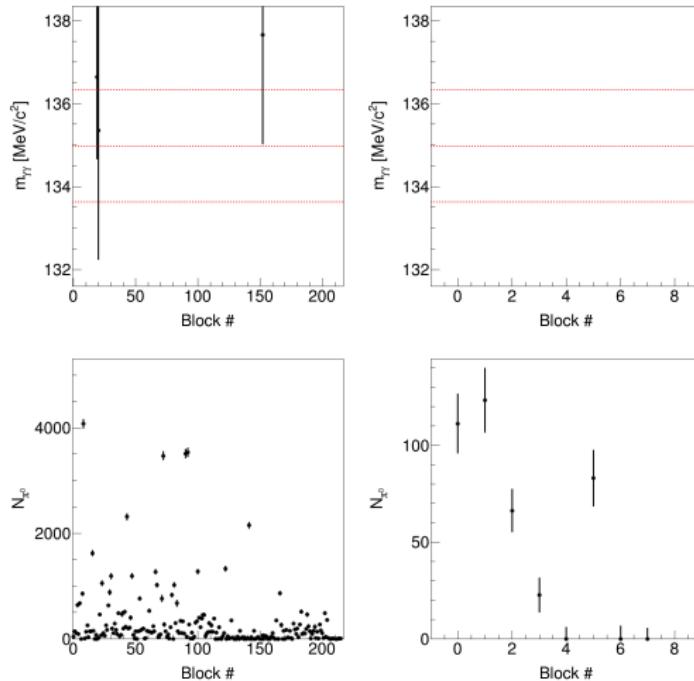


# QC per rings

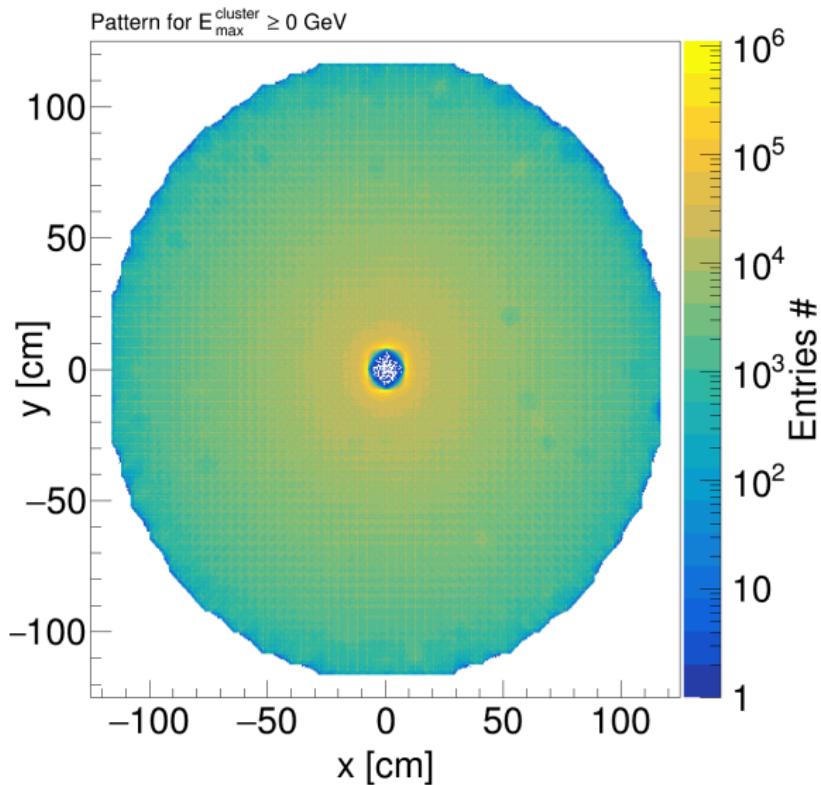
If radius divided by 5 cm, there is 24 rings

● Ring 23

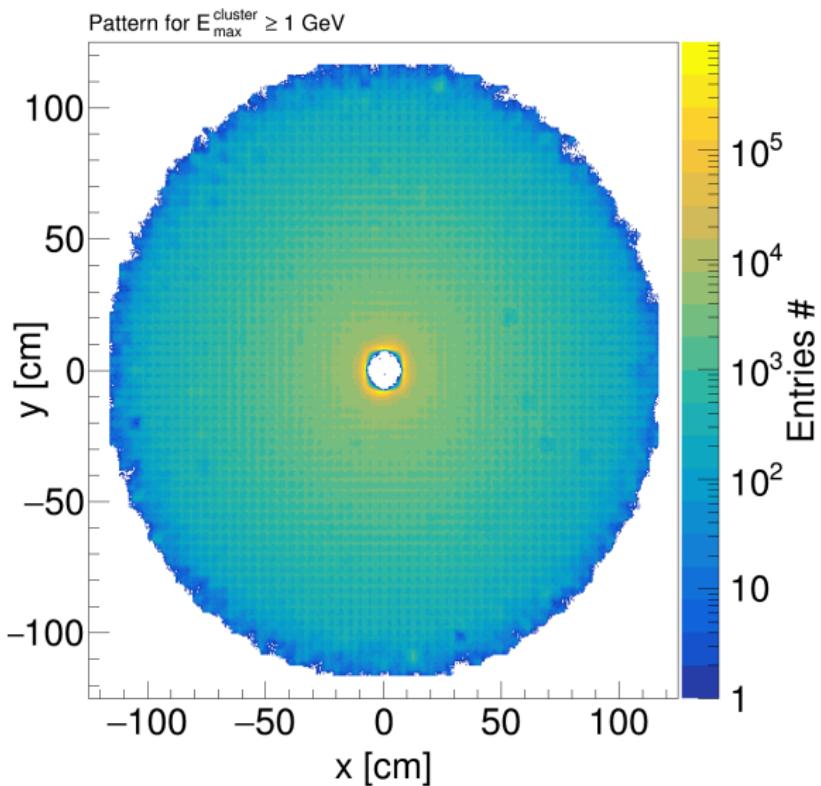
● Ring 24



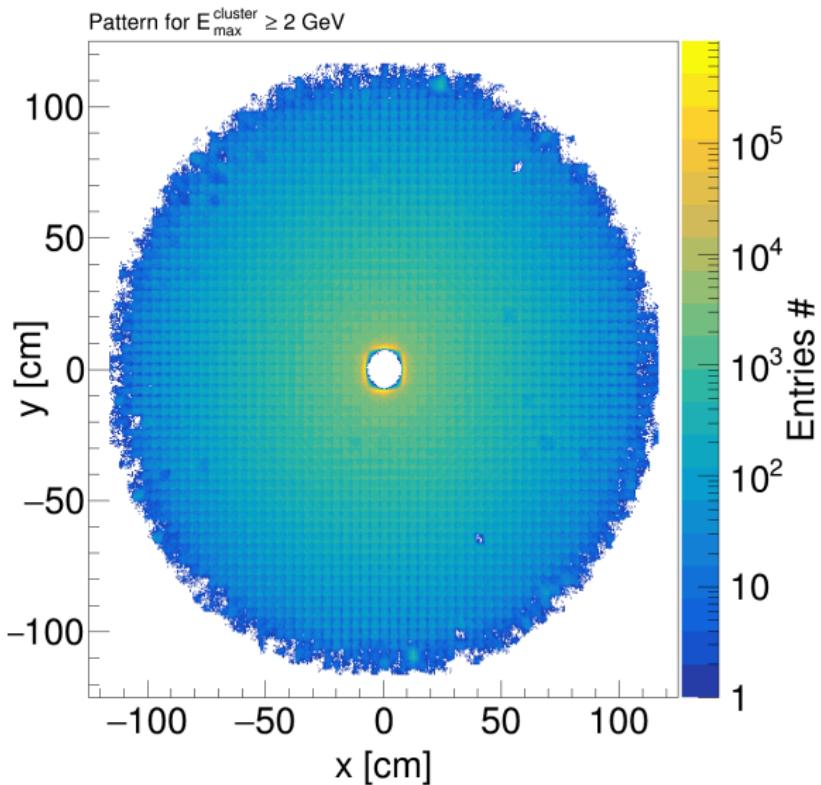
# FCAL pattern



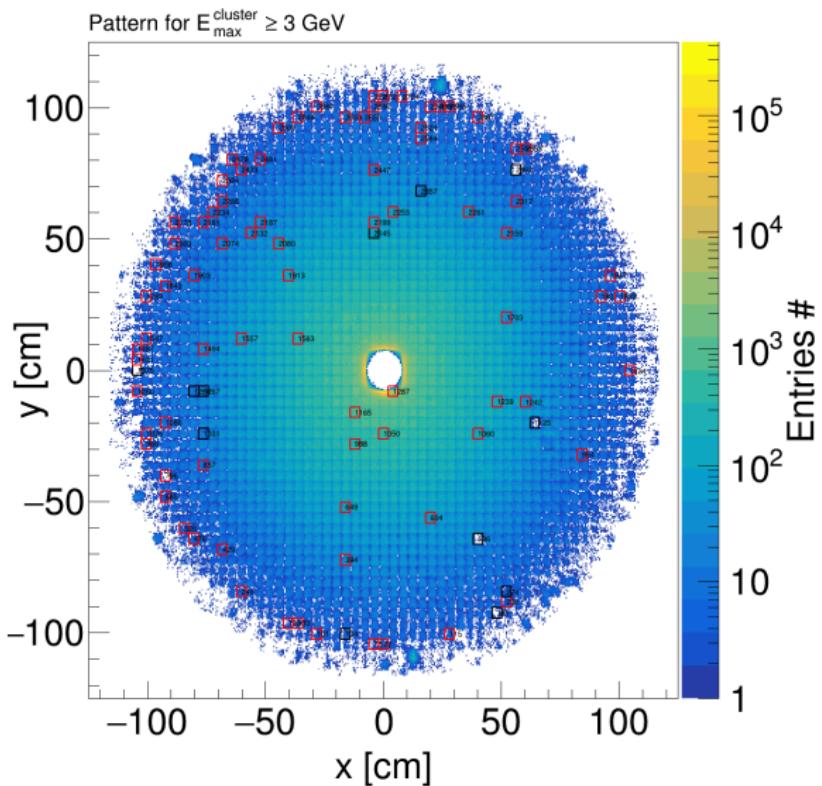
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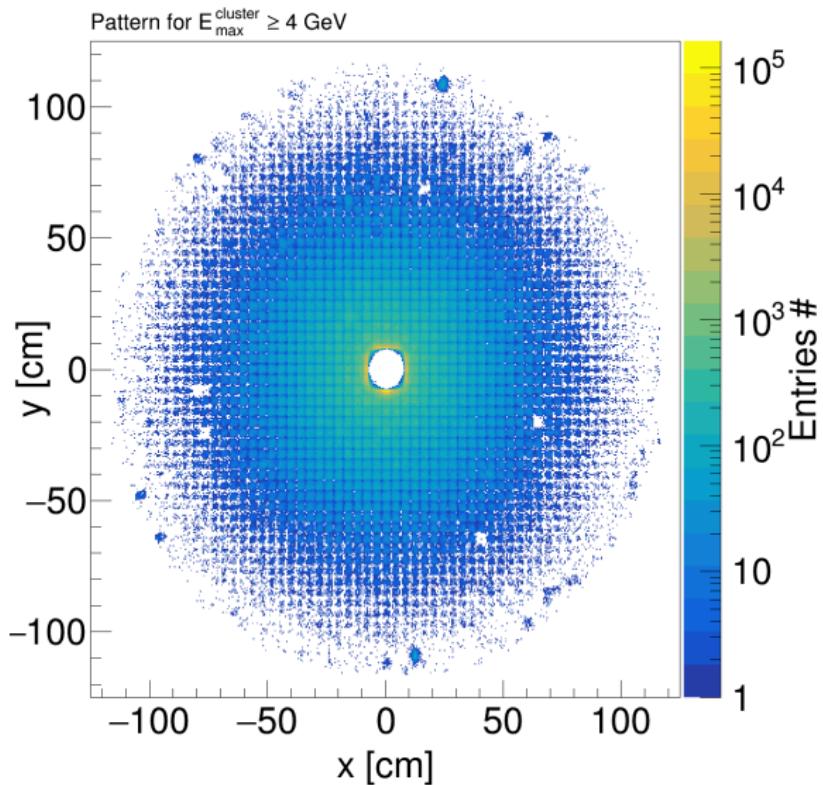
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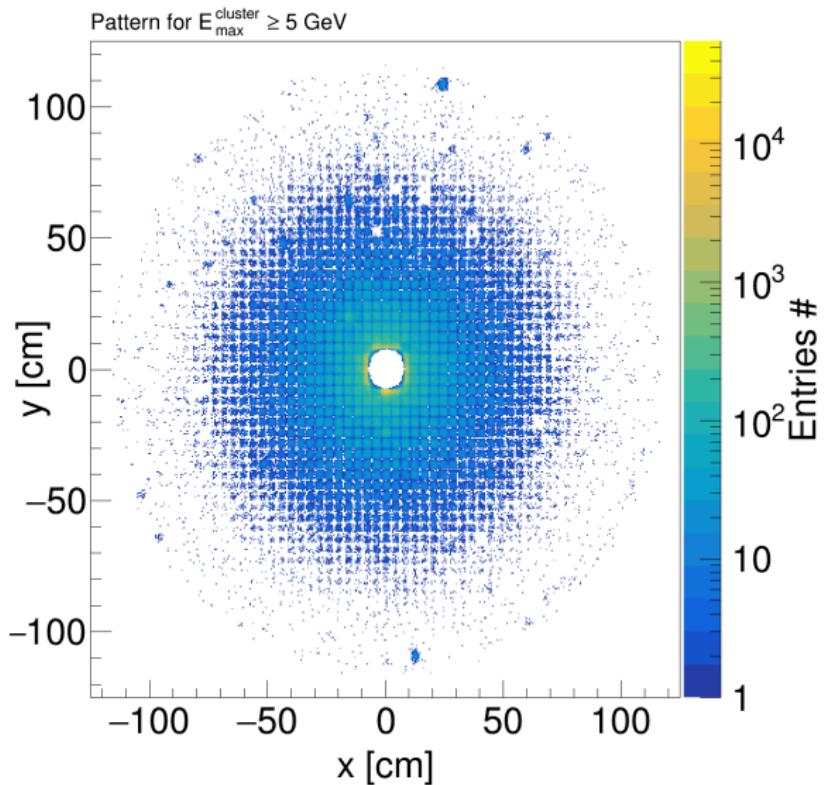
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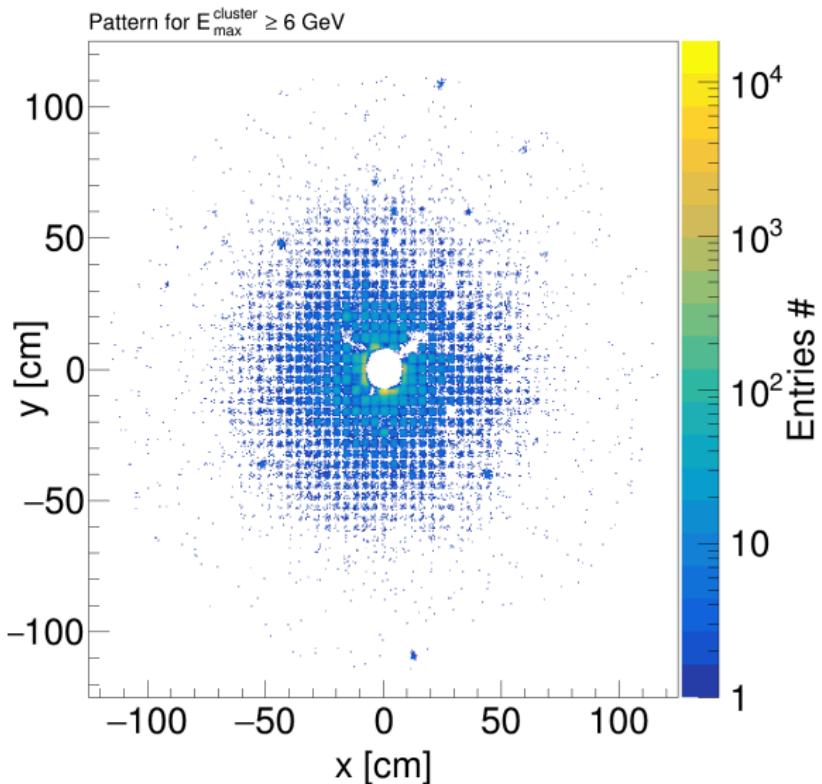
# FCAL pattern



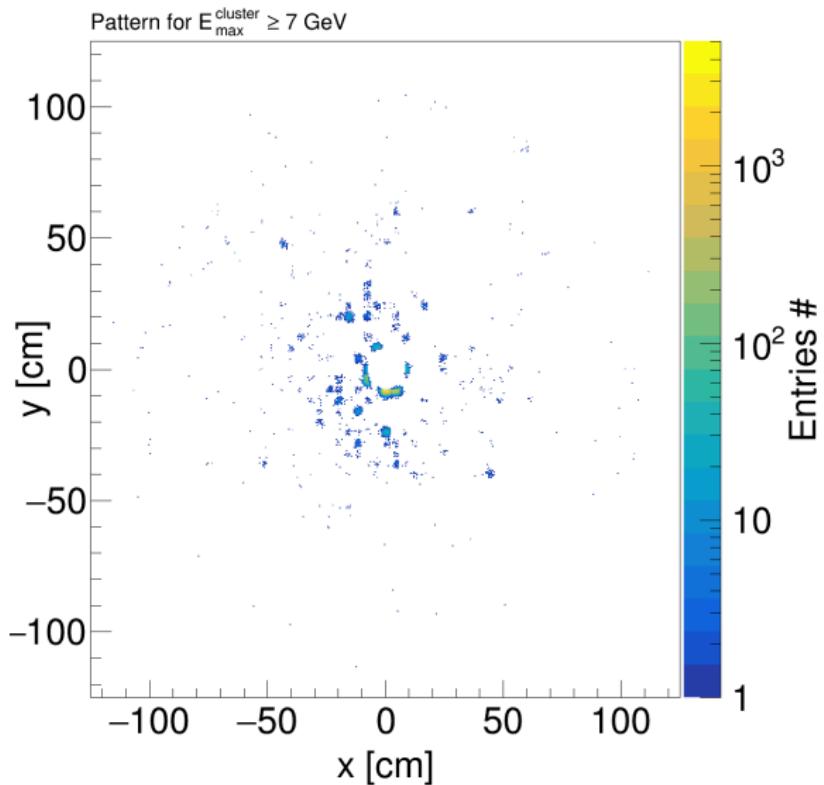
# FCAL pattern



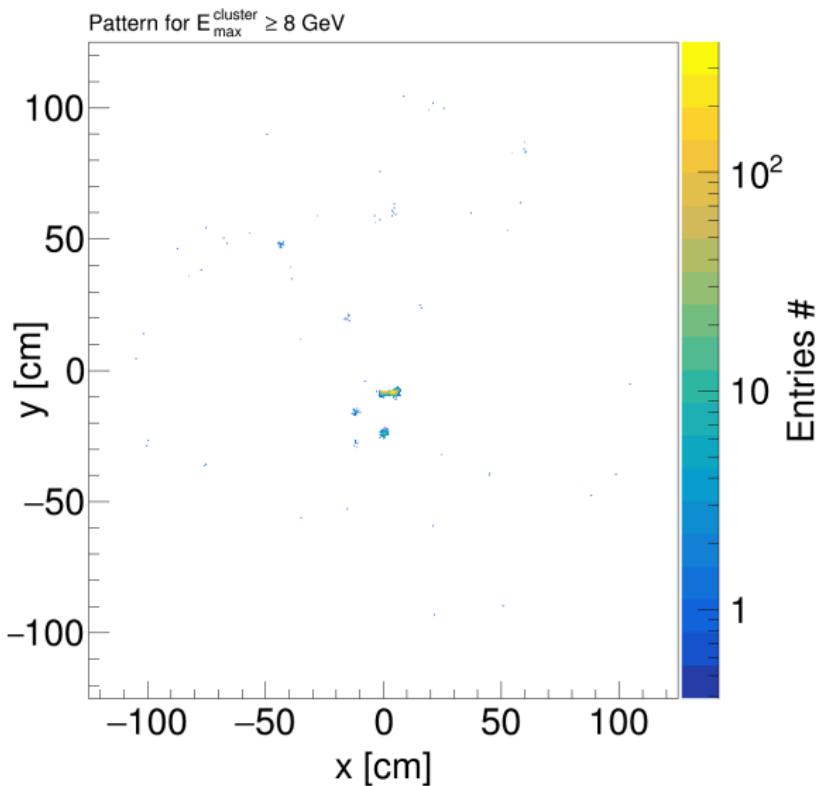
# FCAL pattern



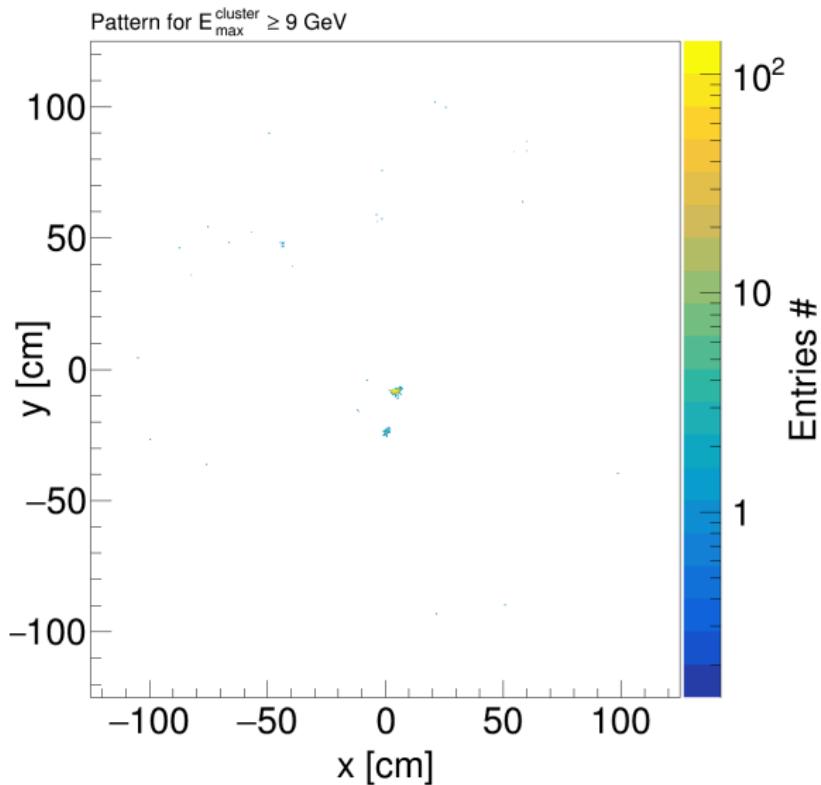
# FCAL pattern



# FCAL pattern



# FCAL pattern



# FCAL pattern

