

# FCAL energy calibration QC

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Thomas Jefferson National Accelerator Facility

for the GlueX Collaboration

ed-period-5

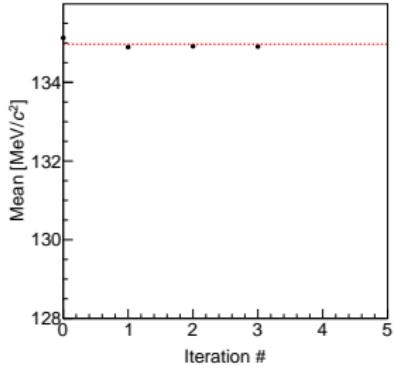


# Table of contents

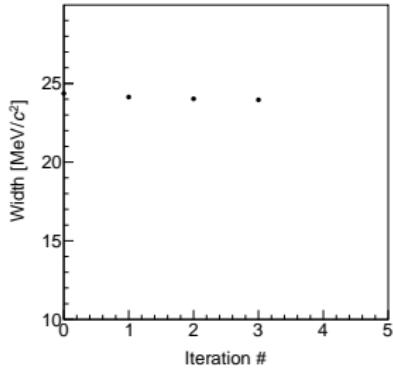
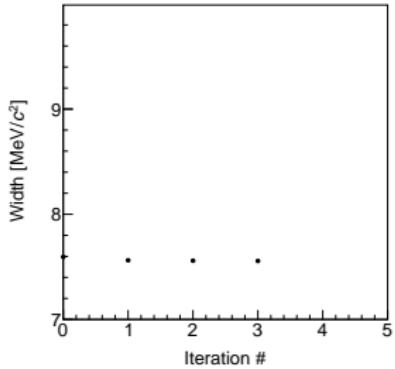
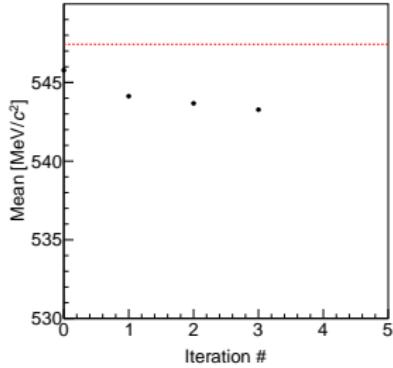
- 1 Overall QC
- 2 QC vs run number
- 3 Energy dependence correction
- 4 QC per rings

# Overall QC vs iteration

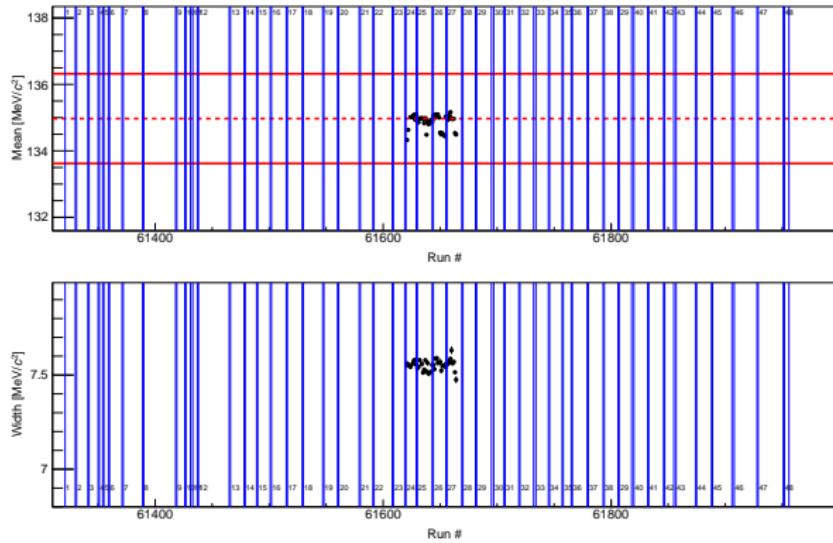
●  $\pi^0$



●  $\eta$

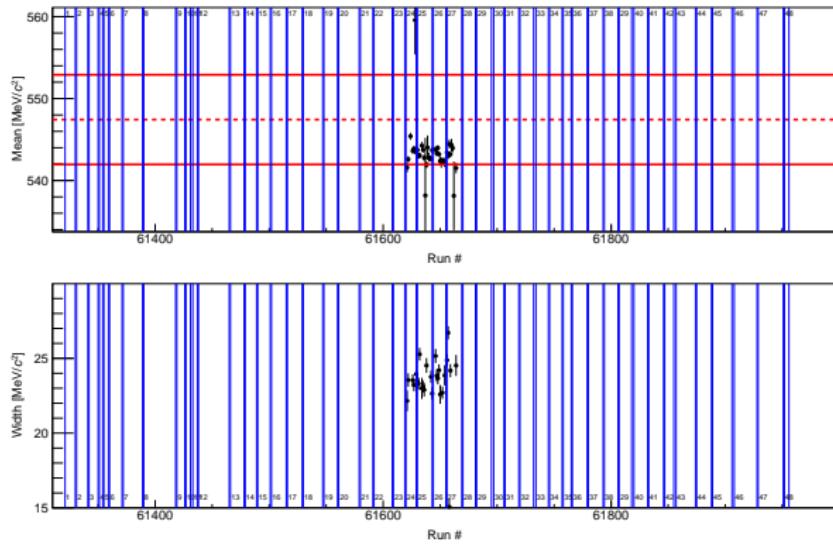


# QC vs run number



vspace5cm

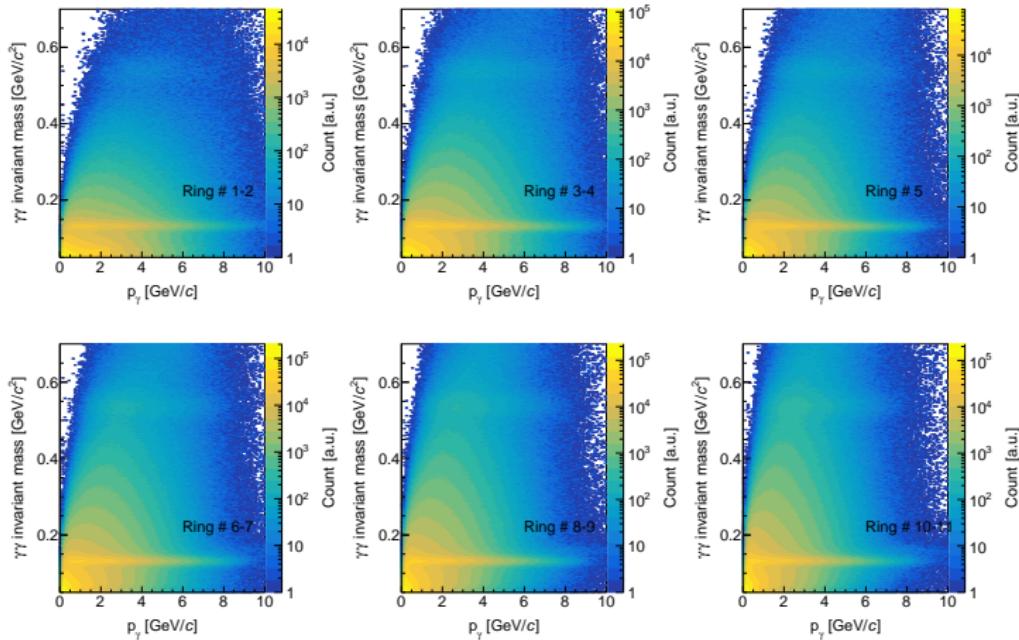
# QC vs run number



vspace5cm

# Energy dependence correction

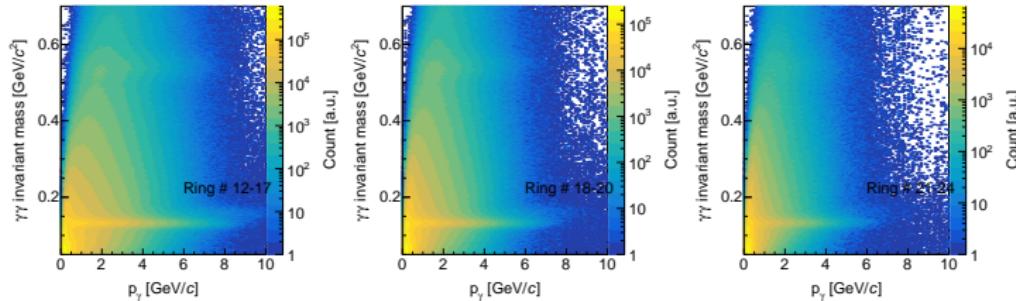
Di-photon invariant mass vs. photon momentum when  $0.7 \leq p_\gamma^1/p_\gamma^2 \leq 1.3$



vspace5cm

# Energy dependence correction

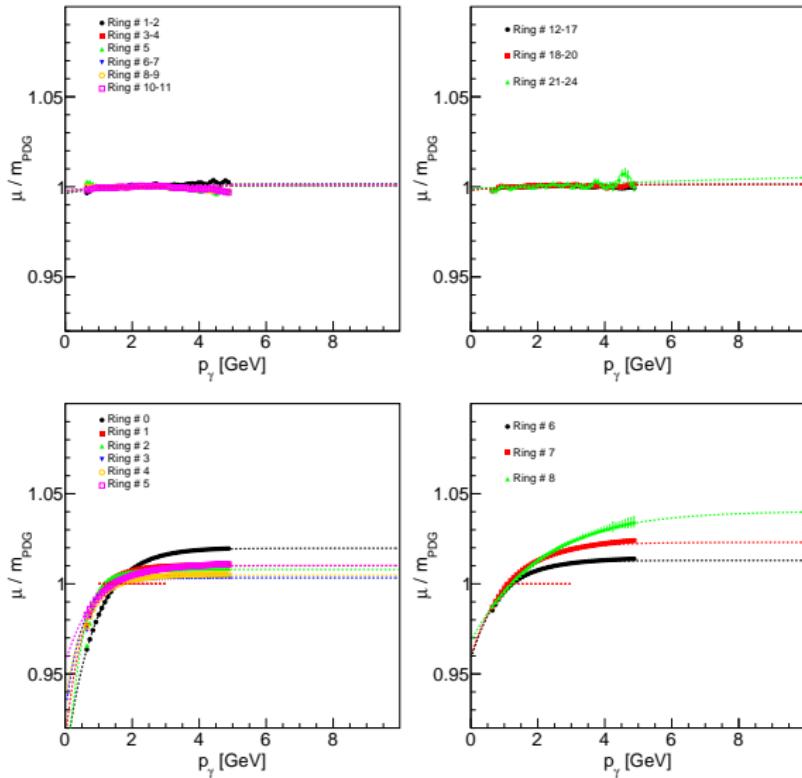
Di-photon invariant mass vs. photon momentum when  $0.7 \leq p_\gamma^1/p_\gamma^2 \leq 1.3$



vspace5cm

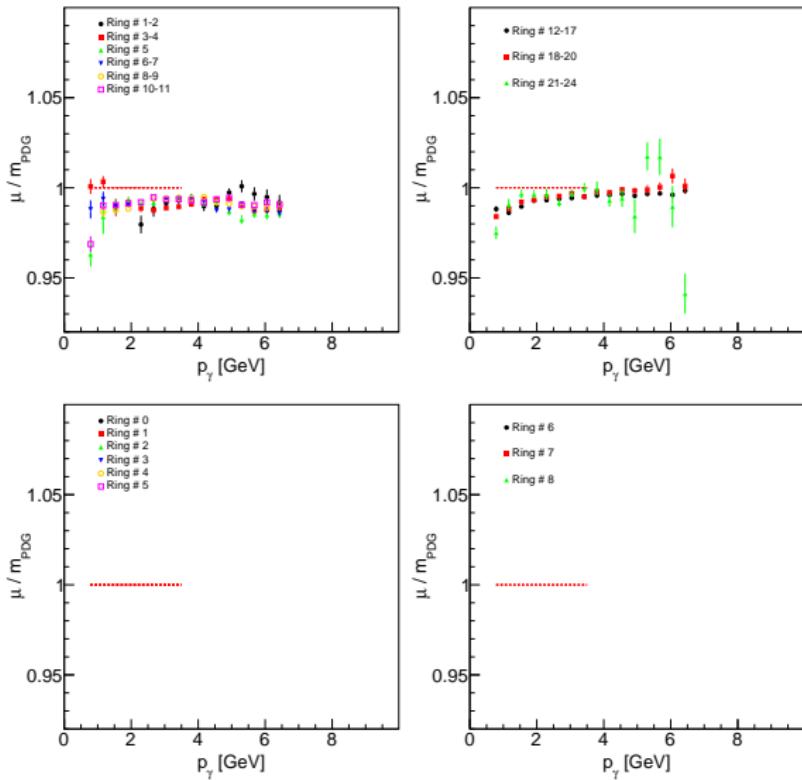
# Energy dependence correction

Di-photon invariant mass vs. photon momentum when  $0.7 \leq p_\gamma^1/p_\gamma^2 \leq 1.3$



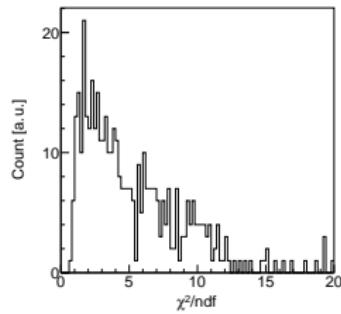
# Energy dependence correction

Di-photon invariant mass vs. photon momentum when no selection critiria for  $\eta$

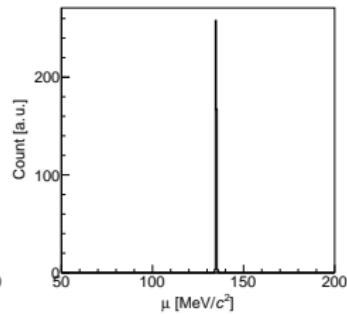


# Overall QC, fit quality

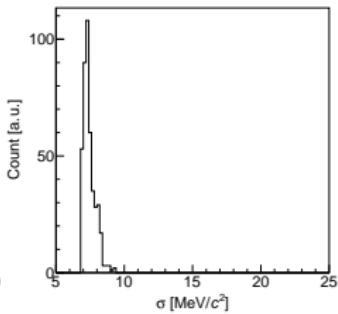
●  $\chi^2$  distribution



● Fitted peak distribution



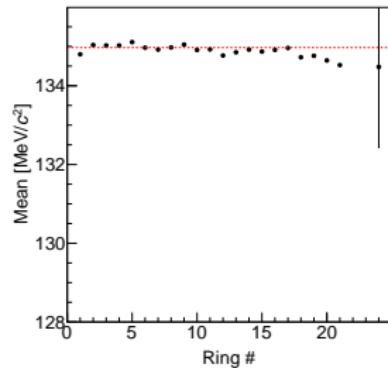
● Fitted width distribution



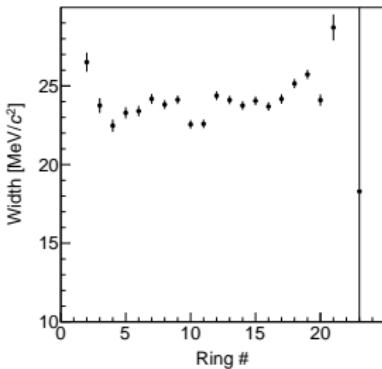
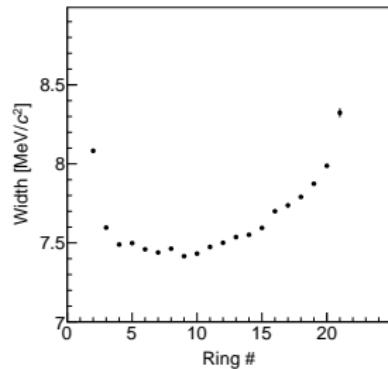
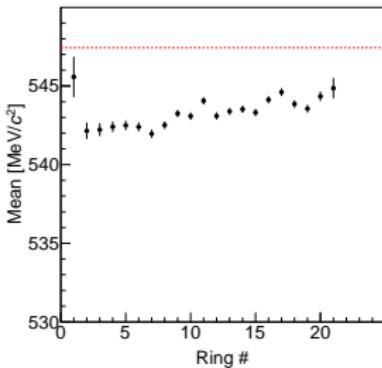
# QC per rings

If radius divided by 5 cm, there is 24 rings

●  $\pi^0$



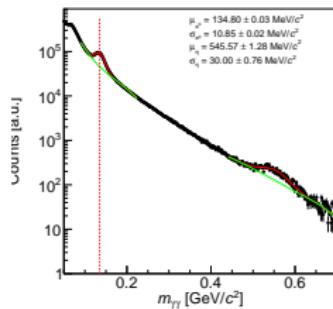
●  $\eta$



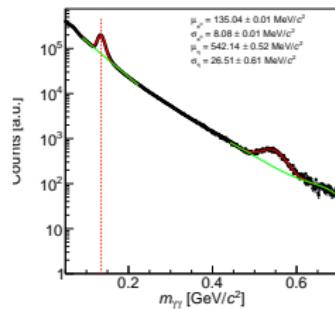
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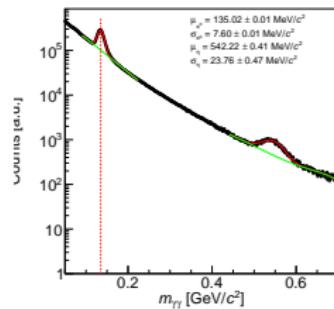
● Ring 1



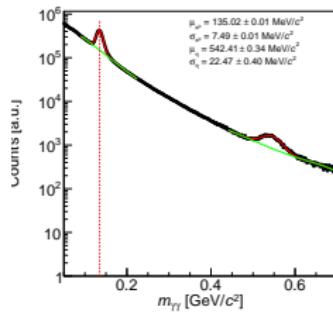
● Ring 2



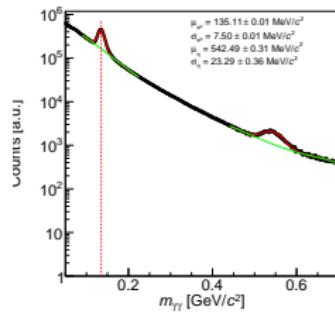
● Ring 3



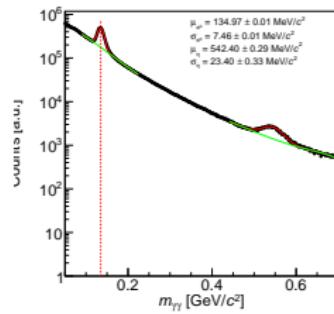
● Ring 4



● Ring 5



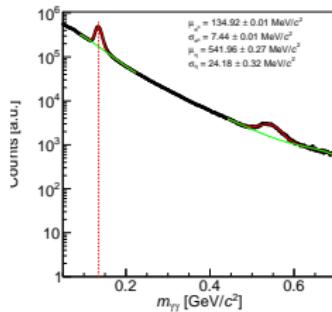
● Ring 6



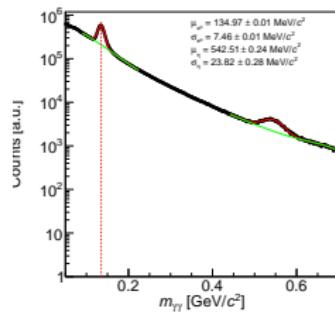
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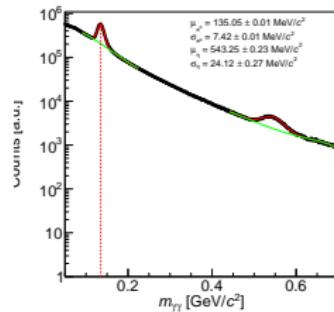
● Ring 7



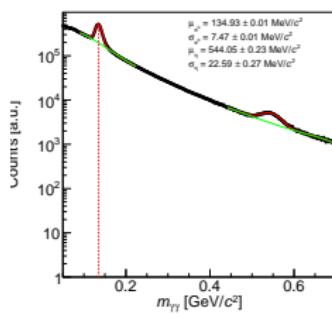
● Ring 8



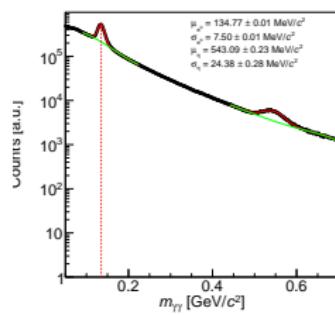
● Ring 9



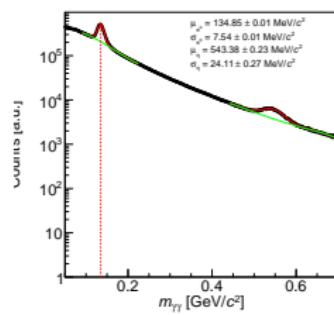
● Ring 11



● Ring 12



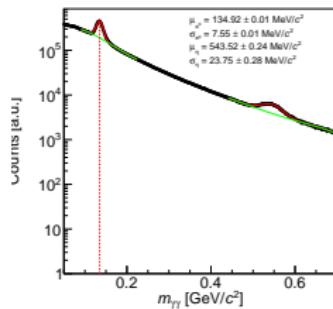
● Ring 13



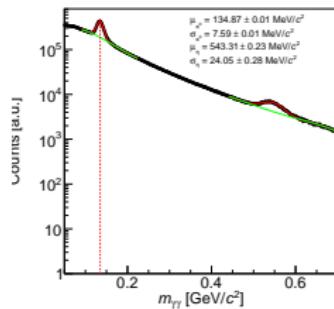
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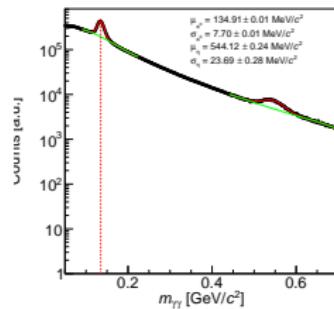
● Ring 14



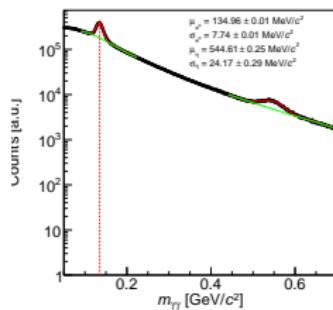
● Ring 15



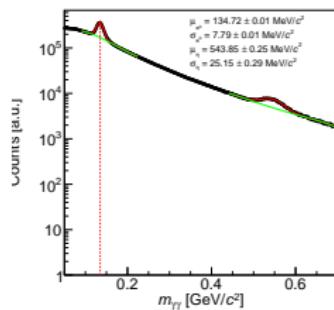
● Ring 16



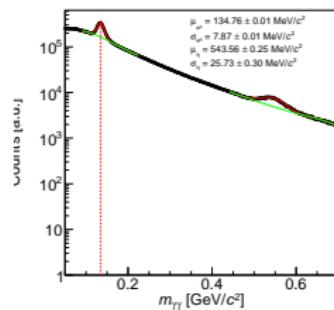
● Ring 17



● Ring 18



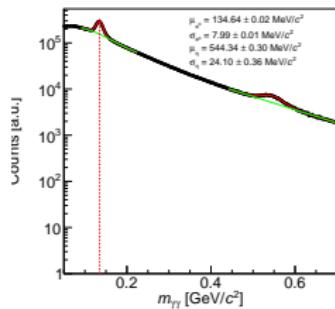
● Ring 19



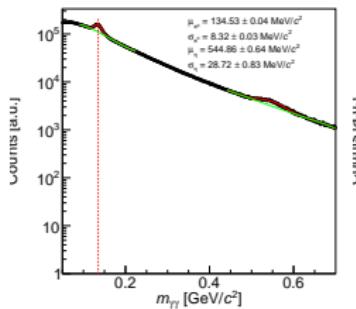
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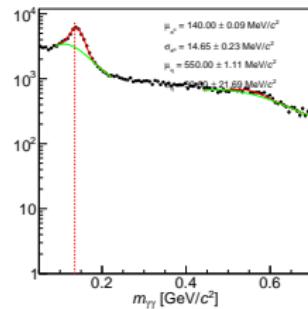
● Ring 20



● Ring 21



● Ring 22



● Ring 23

