

Low momentum direct photons  
in p+p @ 200GeV

— Update

# Methodology

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Embedding

All tunings done

Data

All calibrations done

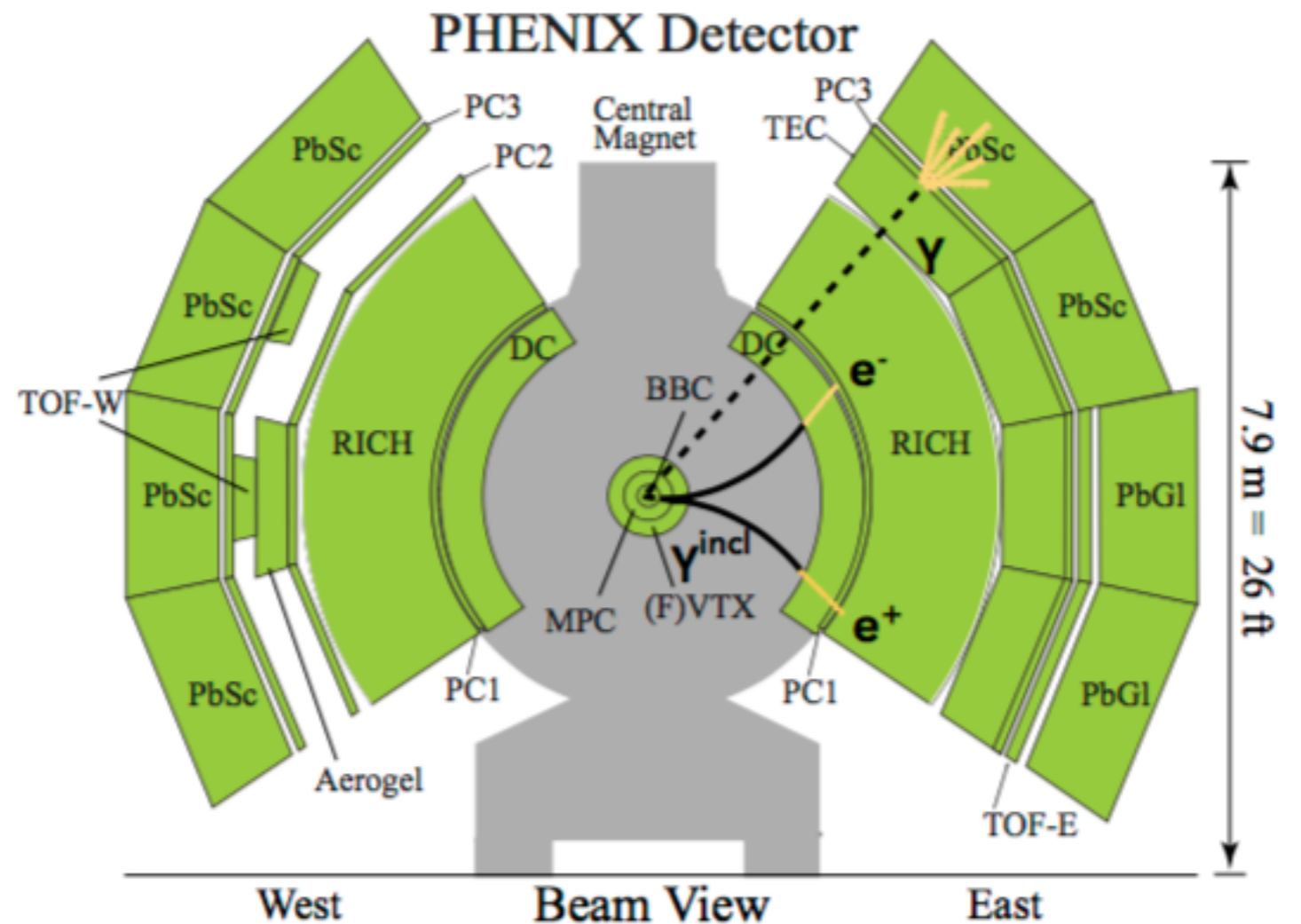
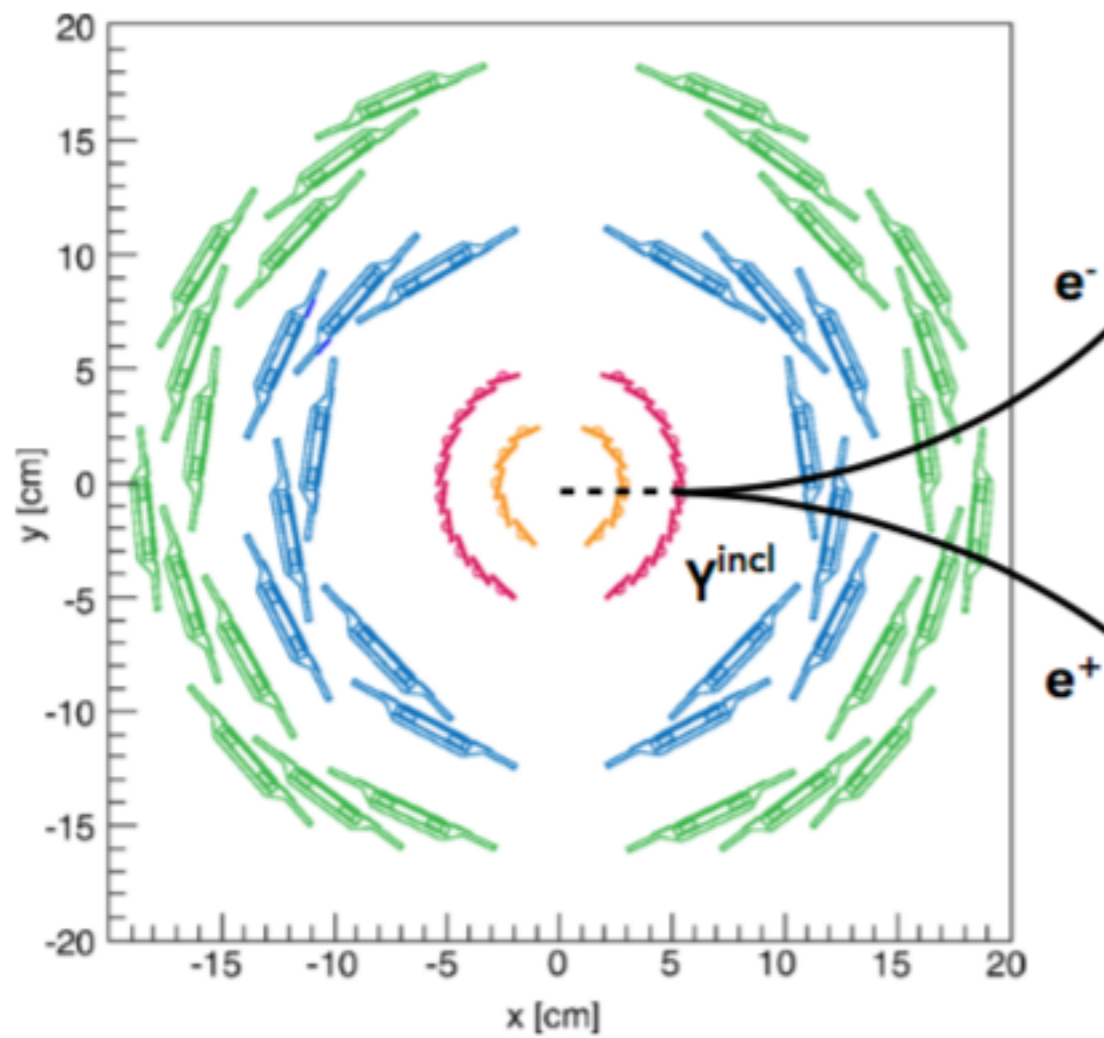
$$R_\gamma = \frac{\gamma_{\text{inclusive}}}{\gamma_{\text{decay}}} = \frac{\langle \epsilon f \rangle \left( \frac{N_{\text{incl}}}{N_{\text{tag}}} \right)}{\left( \frac{N_{\text{all}}}{N_{\pi^0}} \right)}$$

Gives the spectra

Exodus

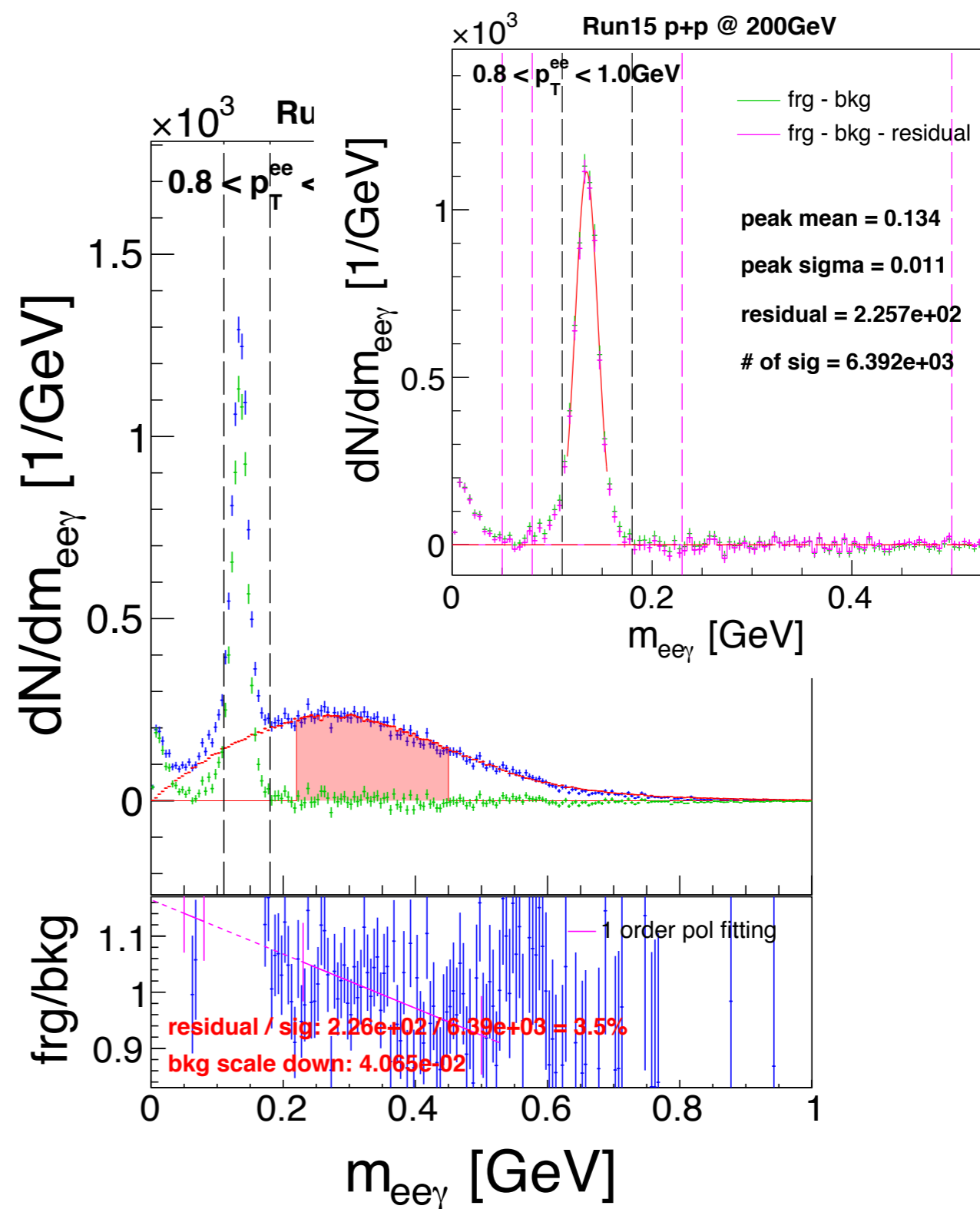
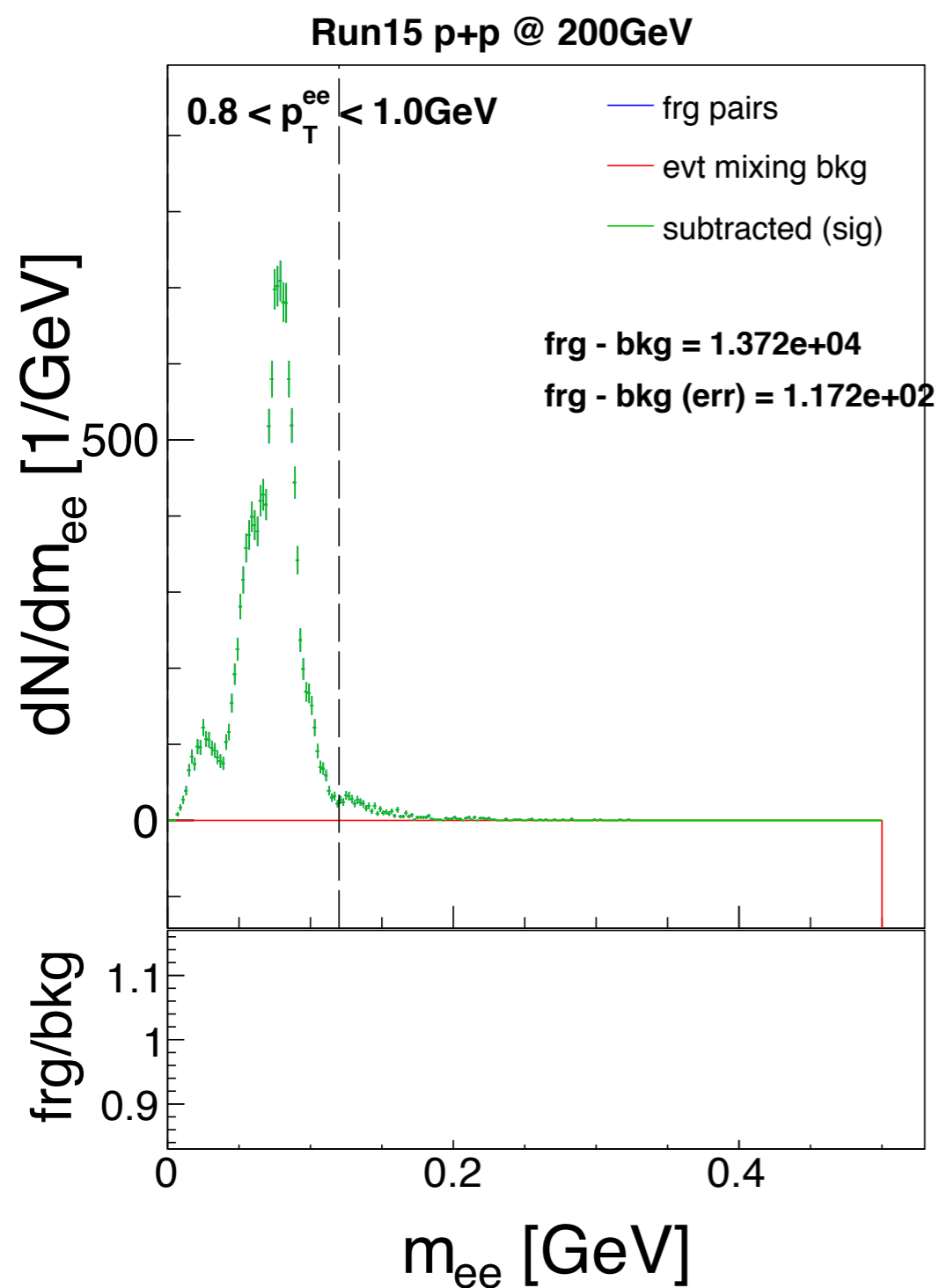
Available from Norbert

# Methodology

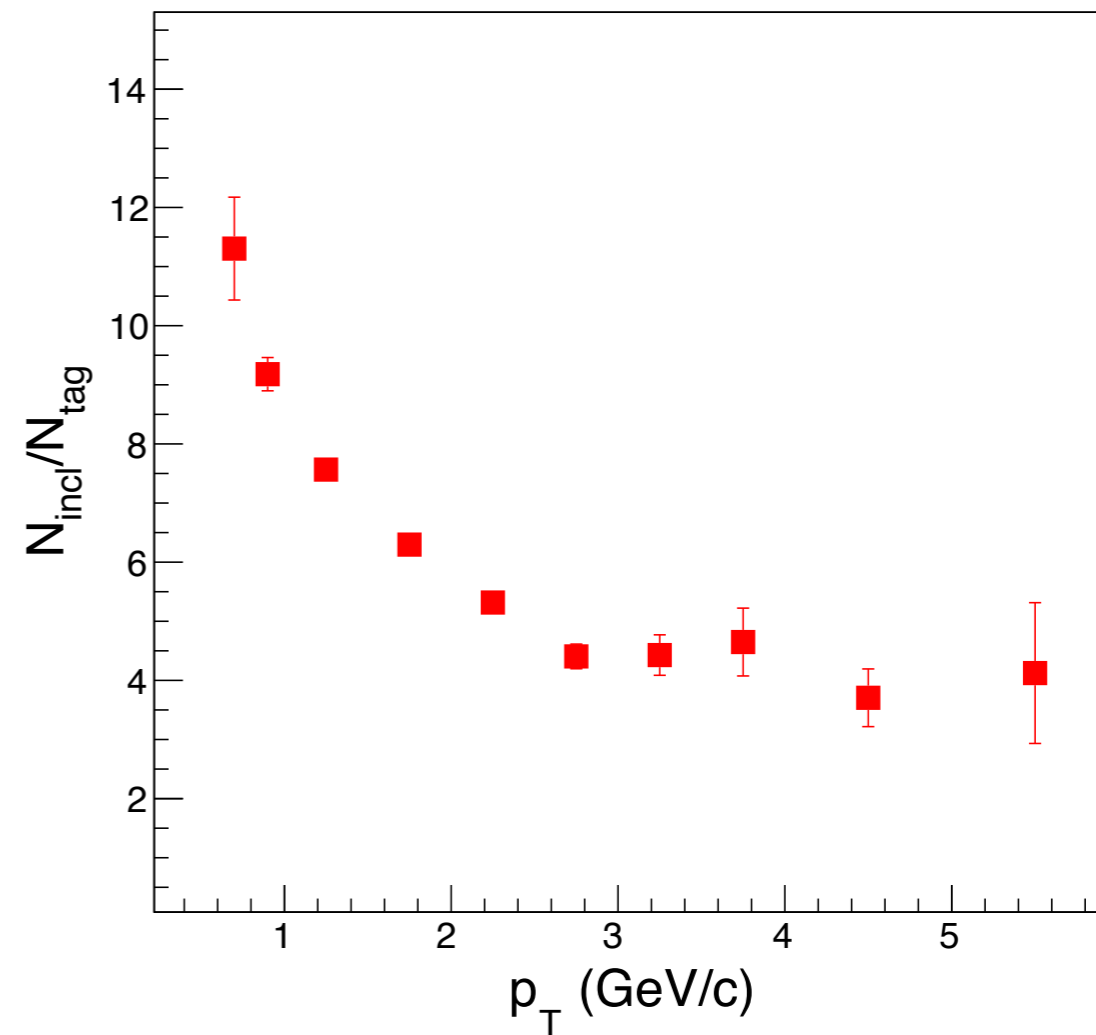
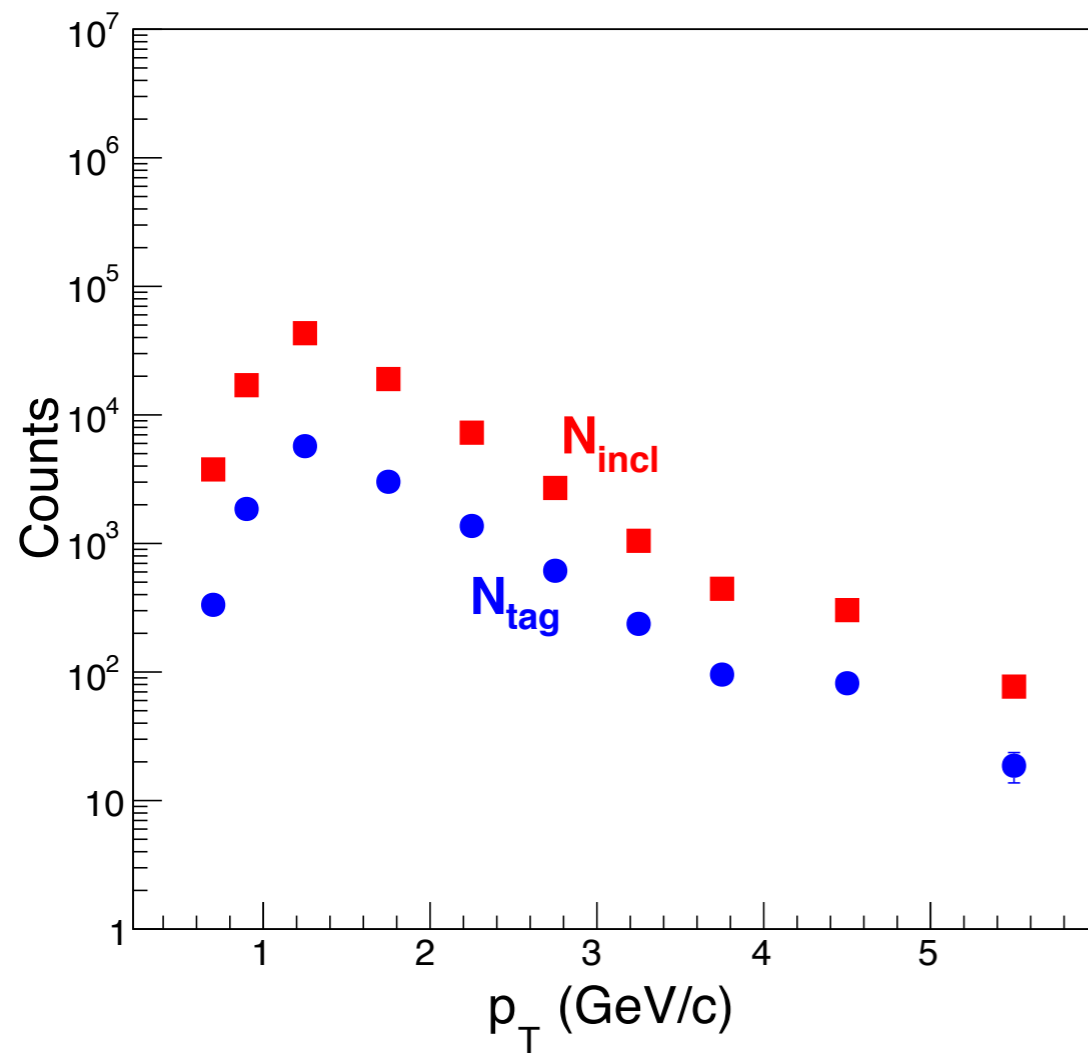


Use Silicon Vertex Tracker as the conversion material to get the photon conversions

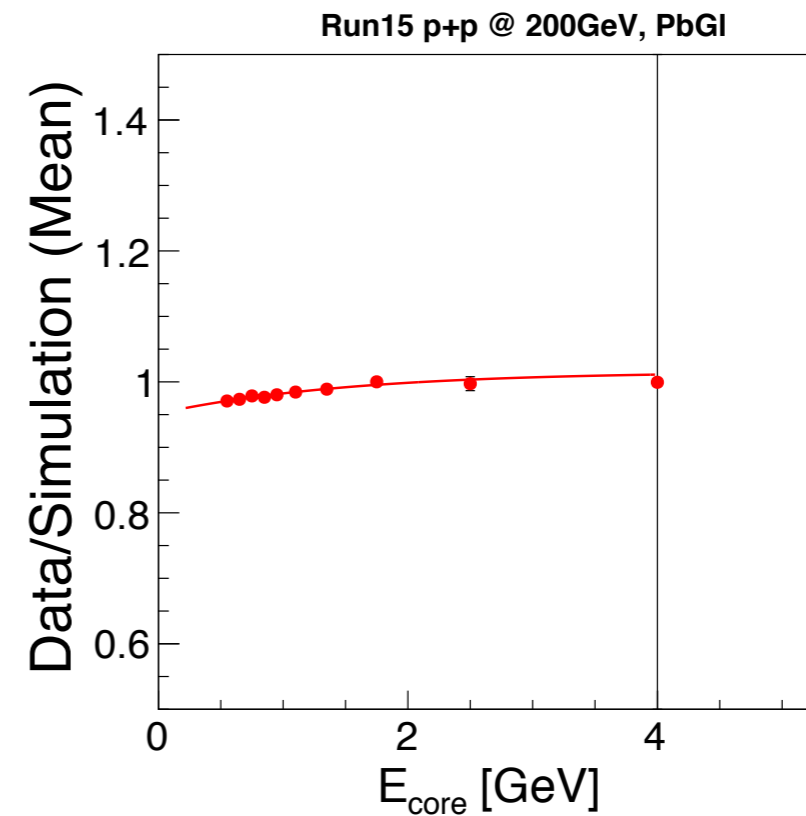
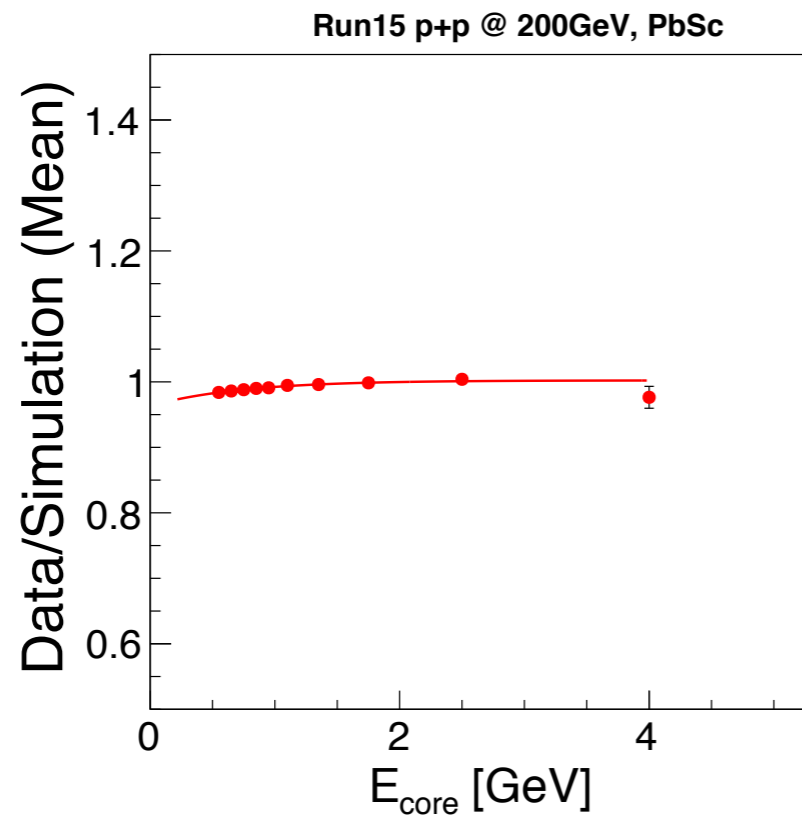
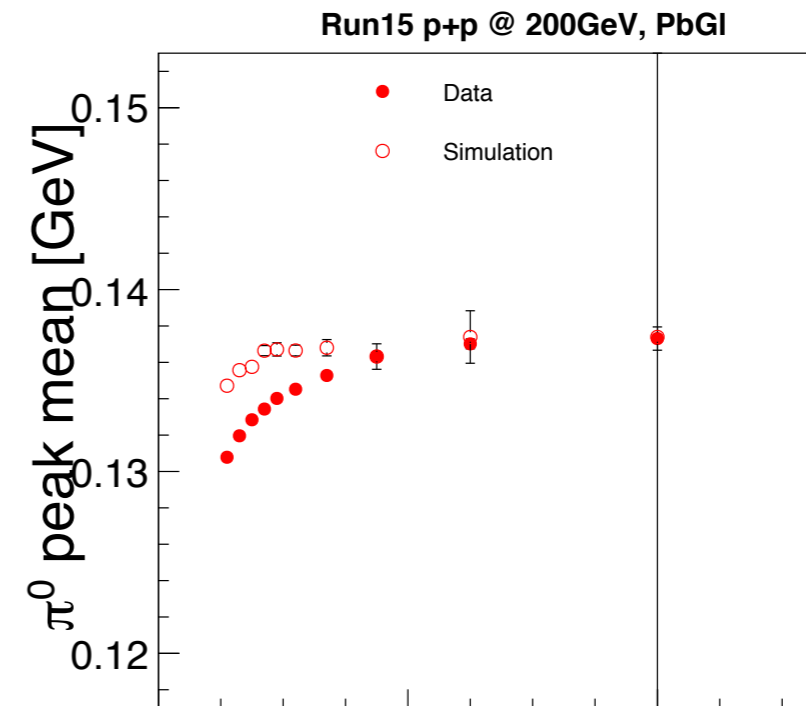
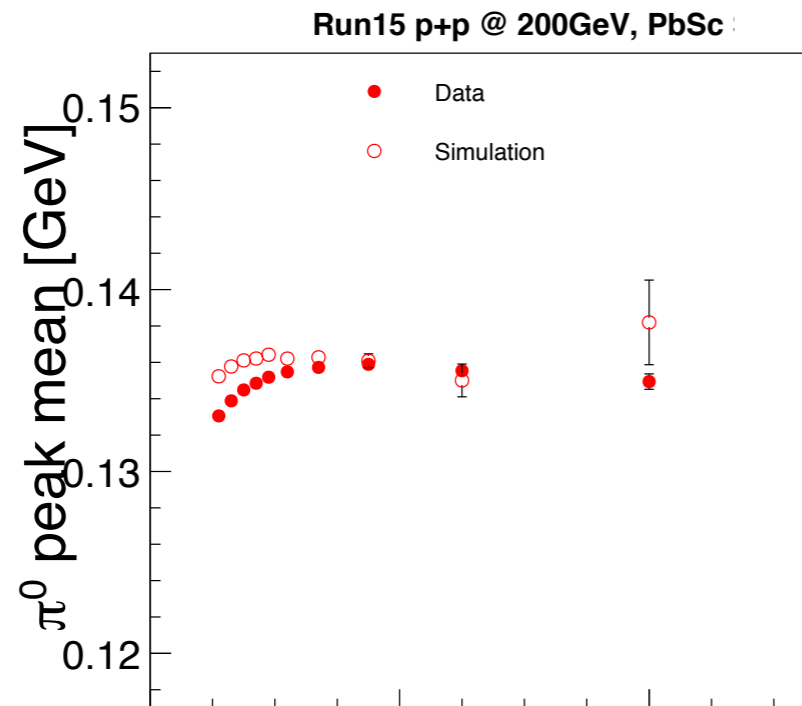
# $N_{\text{incl}}$ & $N_{\text{tag}}$ from p+p @ 200 GeV



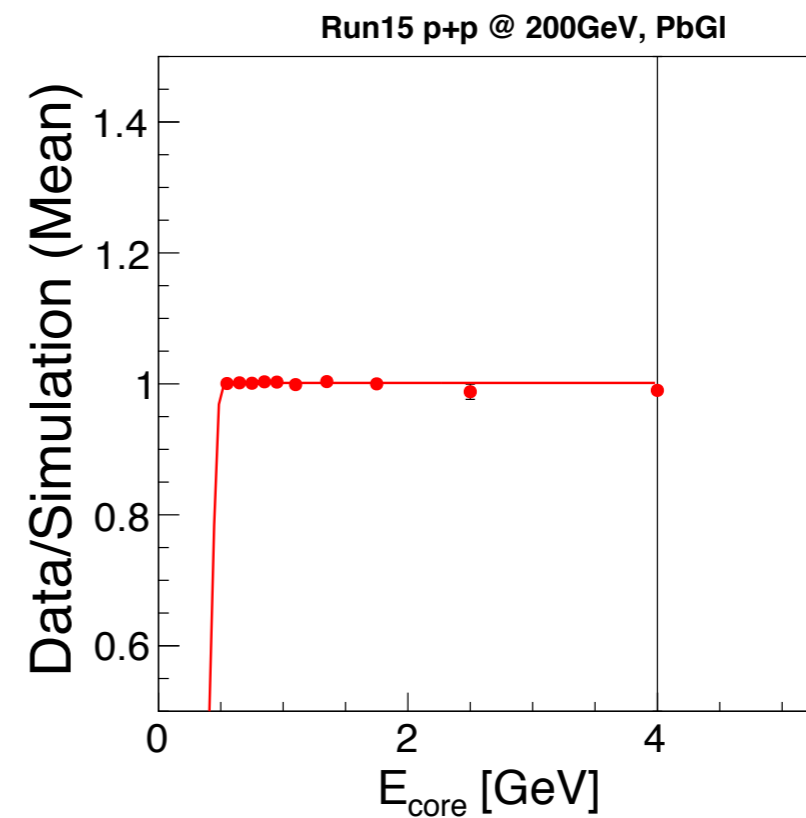
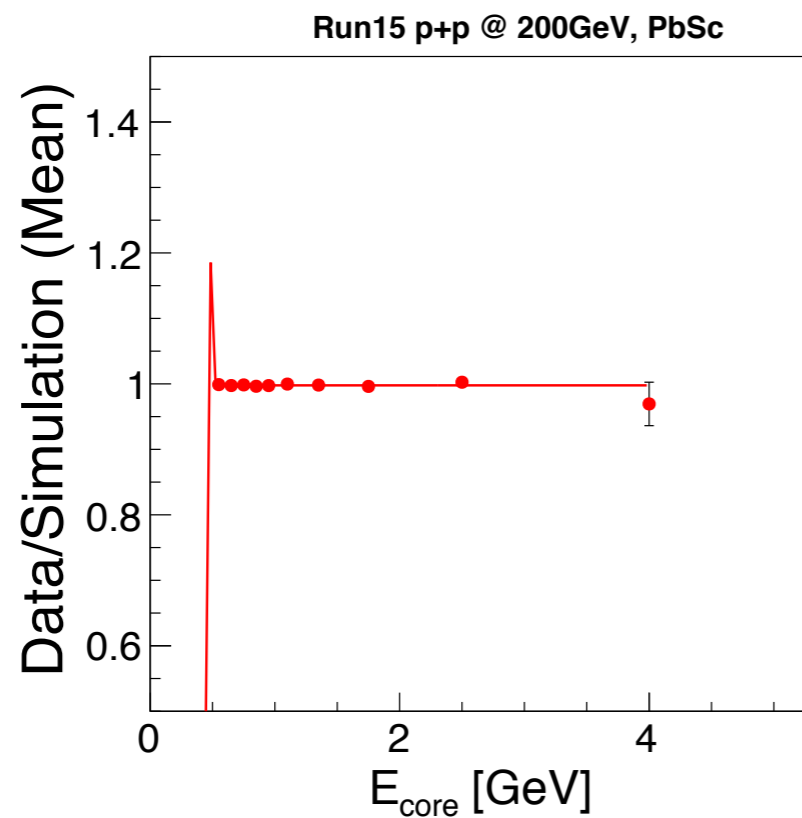
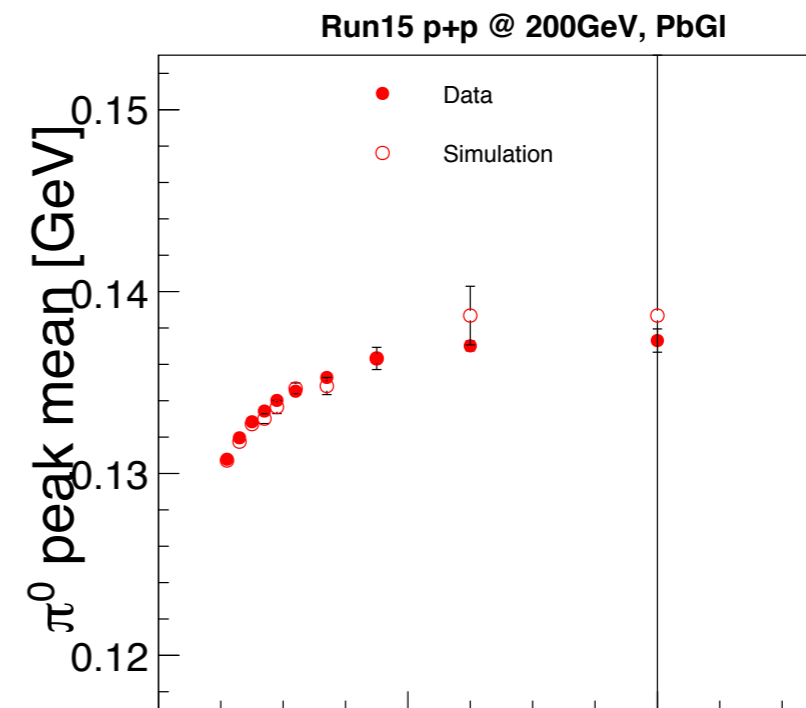
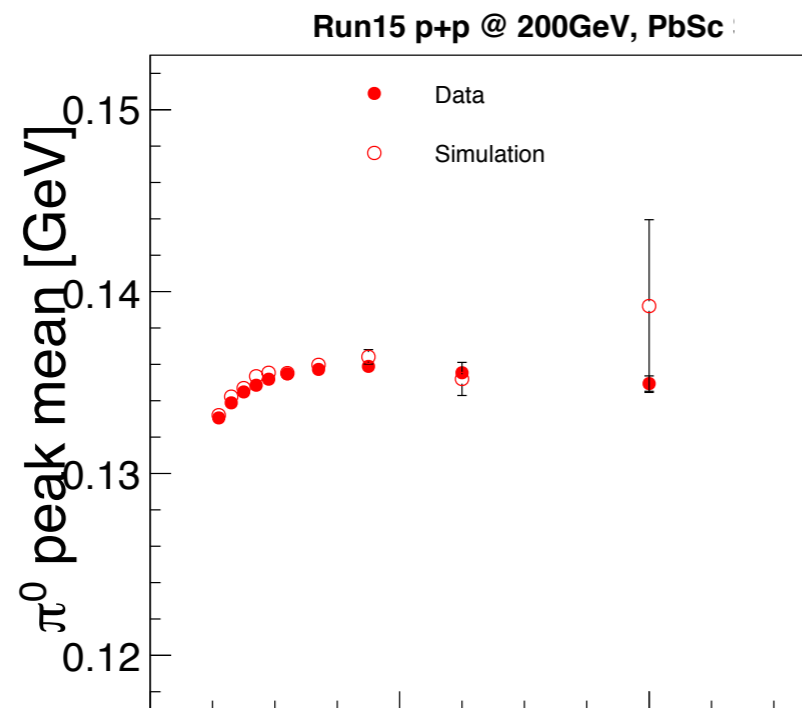
# $N_{\text{incl}} / N_{\text{tag}}$ from p+p @ 200 GeV



# Nonlinear correction



# Nonlinear correction applied

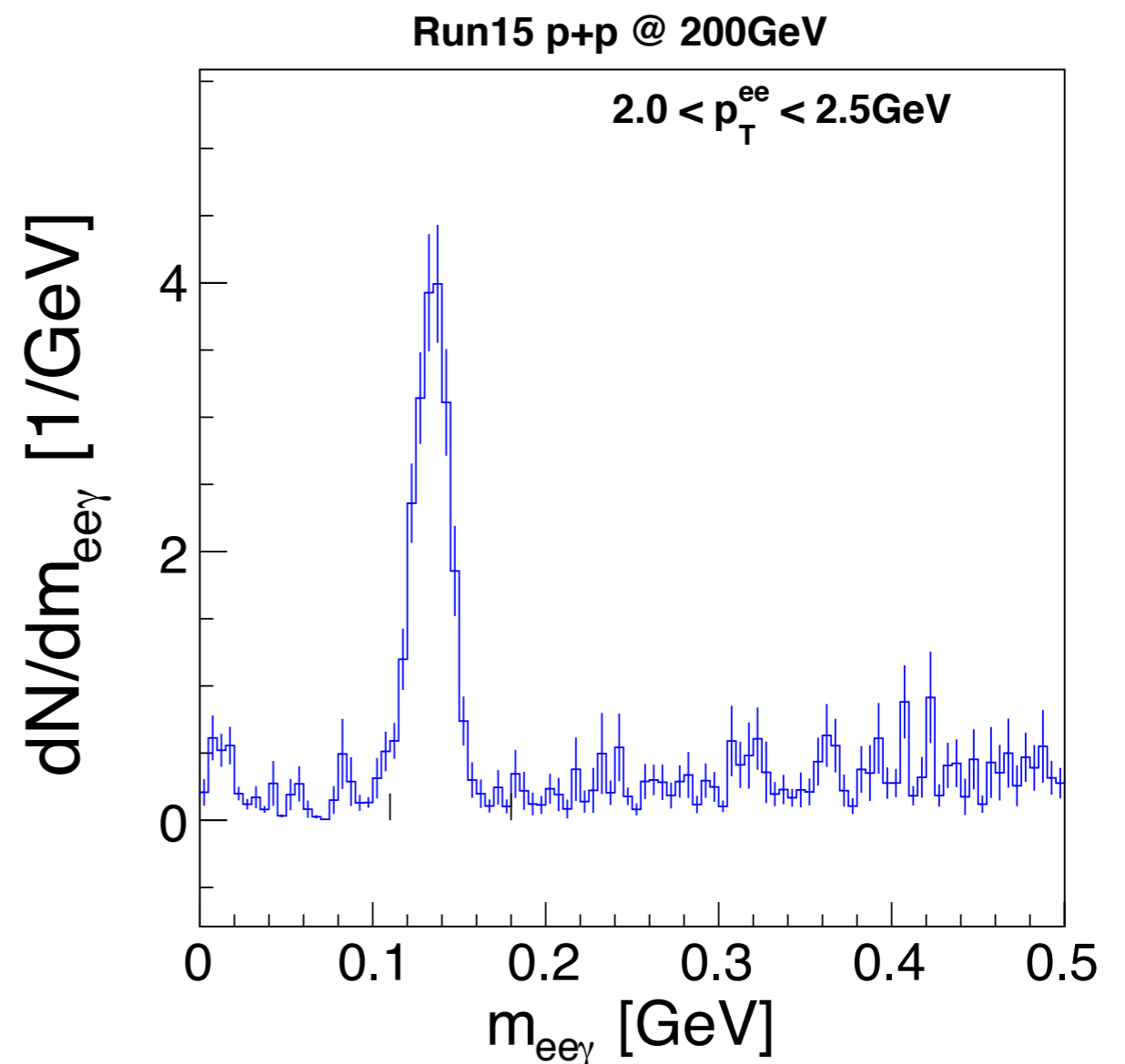
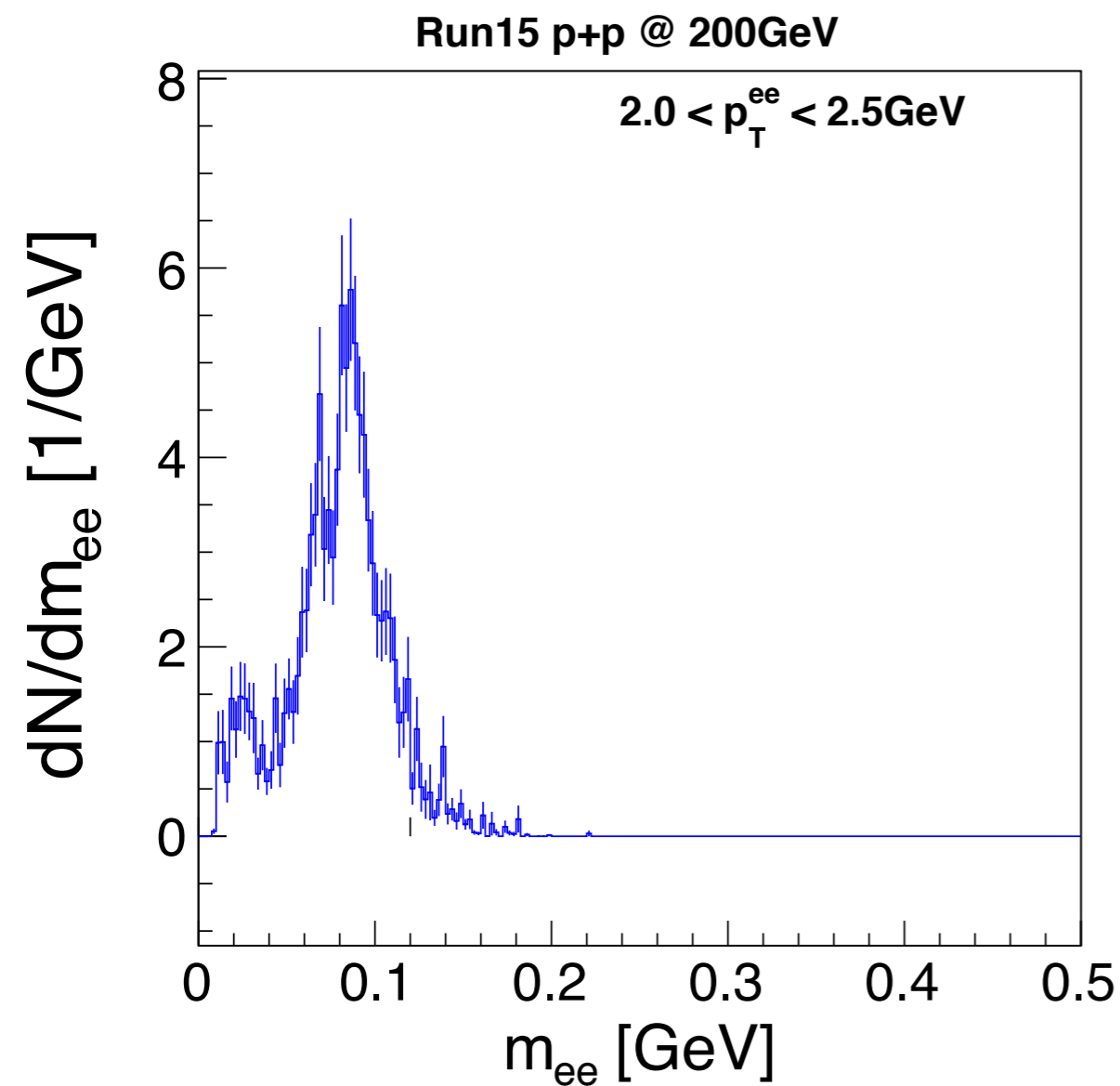






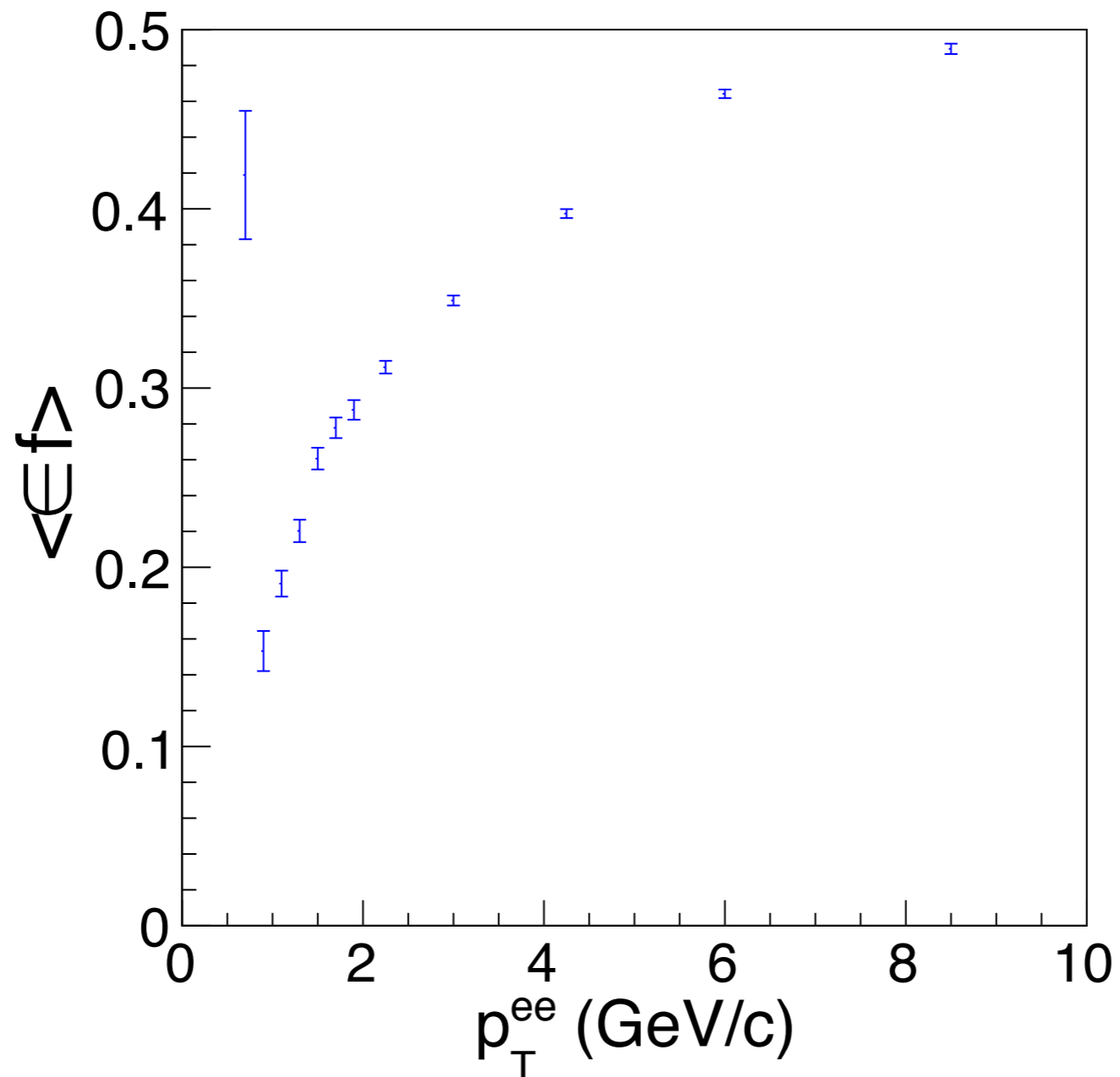


# $N_{\text{incl}}$ & $N_{\text{tag}}$ from p+p @ 200 GeV (embedding)



# $\langle \epsilon f \rangle$ for p+p @ 200 GeV

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# Next steps

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- Get  $\langle \varepsilon_f \rangle$  for p+Au @ 200 GeV (MB and Cent)
- Already have the cocktail ratio from Norbert
- Finalize systematics