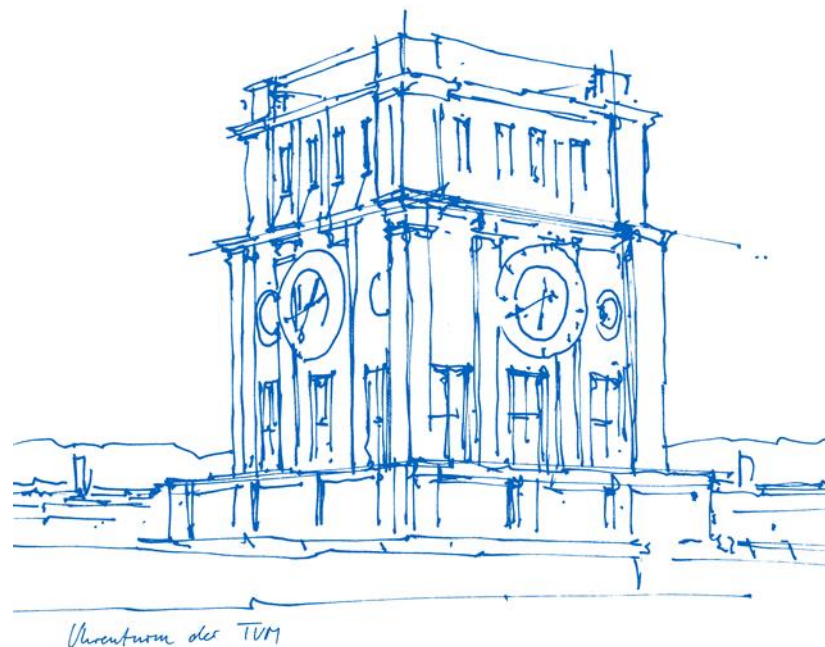
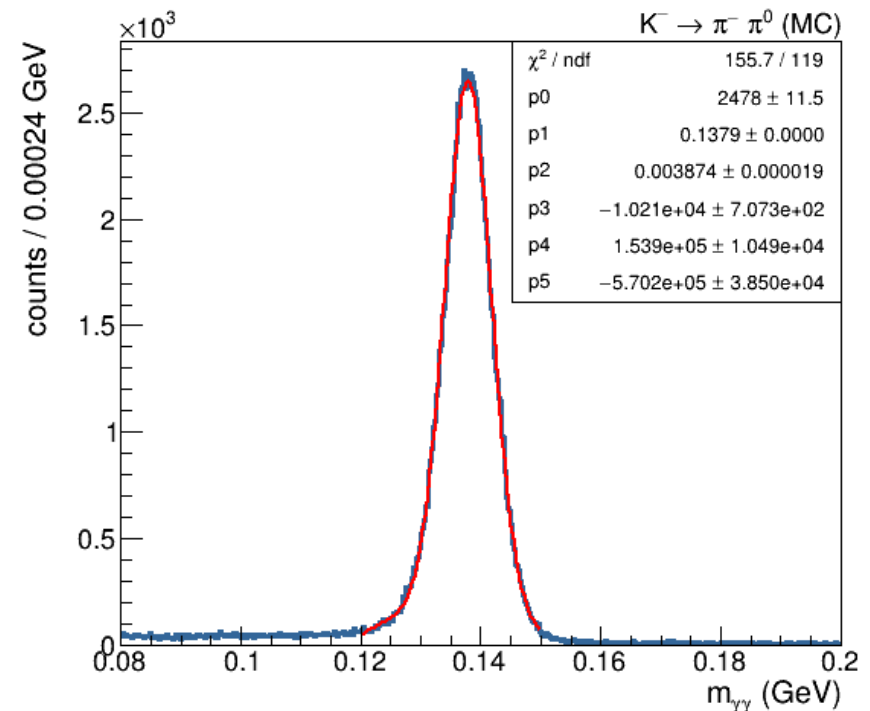


Calibration of ECAL2 in MC

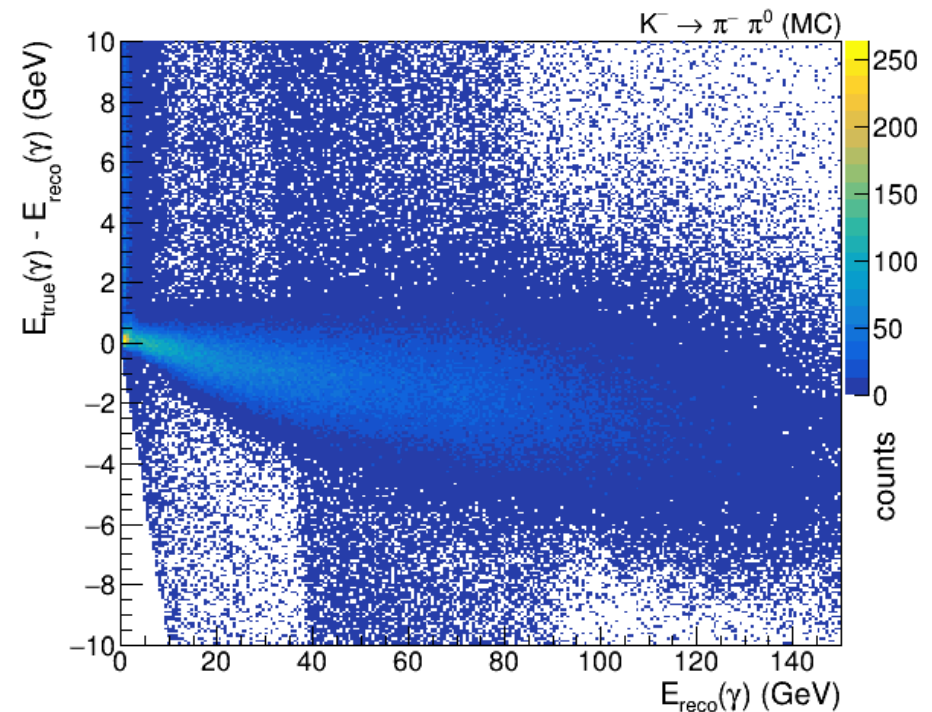
Dominik Steffen - CORAL weekly meeting 11/09/2020



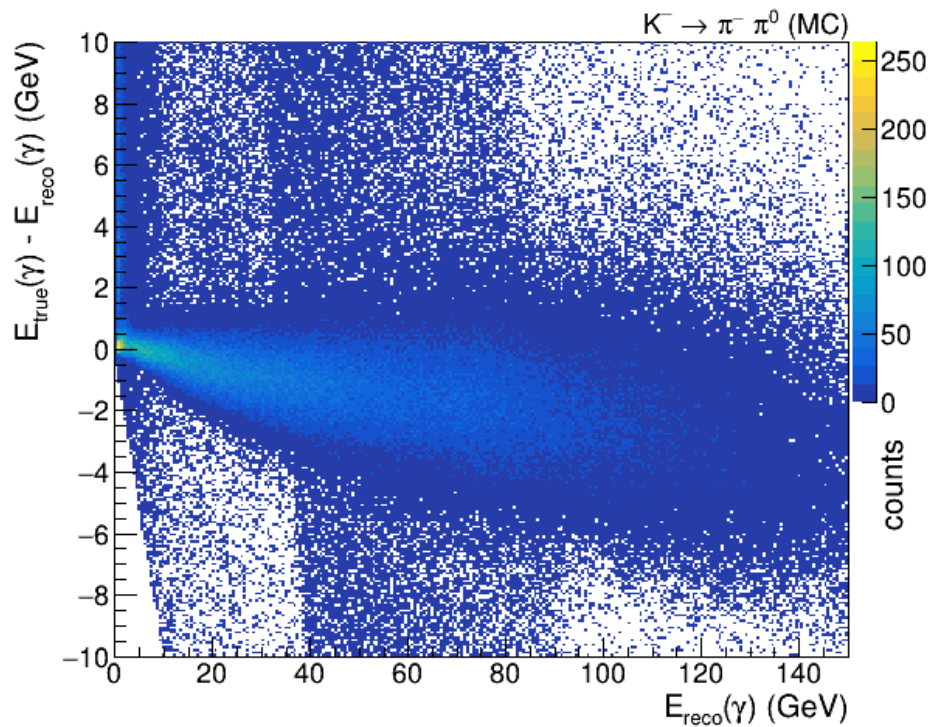
- Situation:
 - Pi0 mass in MC at wrong position
 - Gammas seem not be reconstructed with the correct energy/position
- Investigating:
 - Reconstructed cluster energy vs MC true
 - Compare true gamma energy to all reconstructed cluster energies in event (within time window and above threshold)



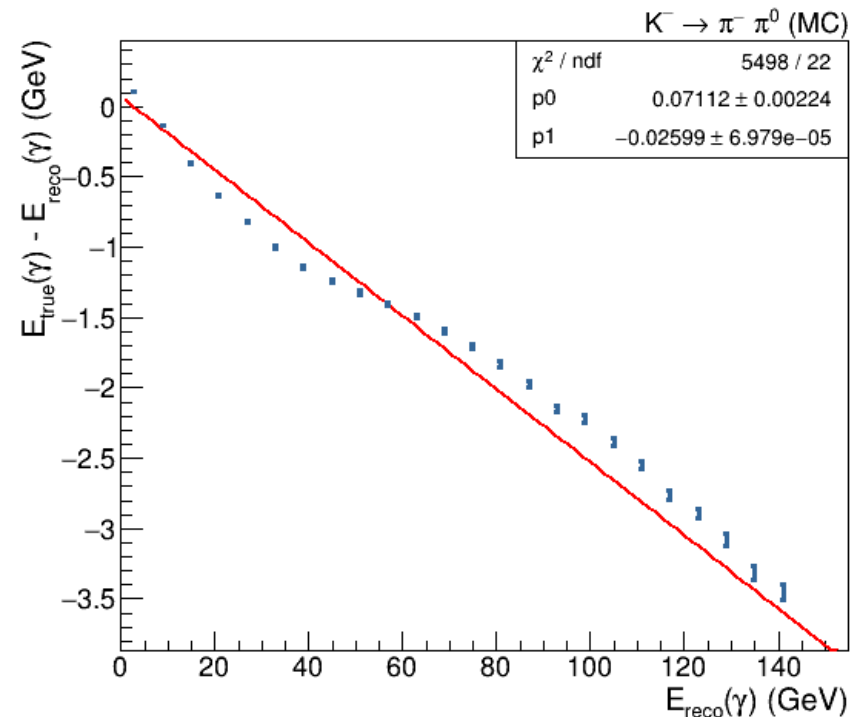
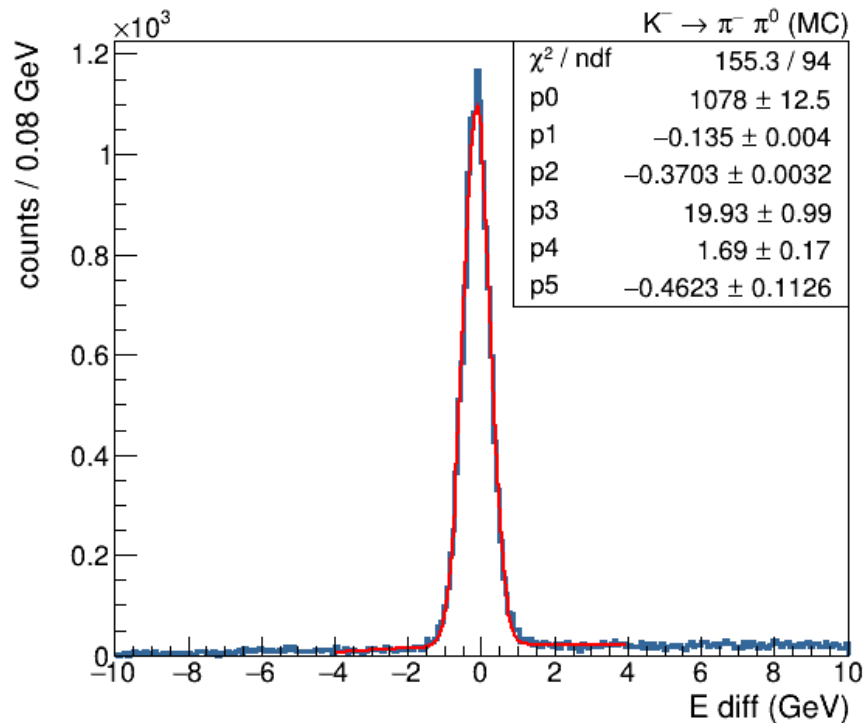
- Situation:
 - Pi0 mass in MC at wrong position
 - Gammas seem not be reconstructed with the correct energy/position
- Investigating:
 - Reconstructed cluster energy vs MC true
 - Compare true gamma energy to all reconstructed cluster energies in event (within time window and above threshold)



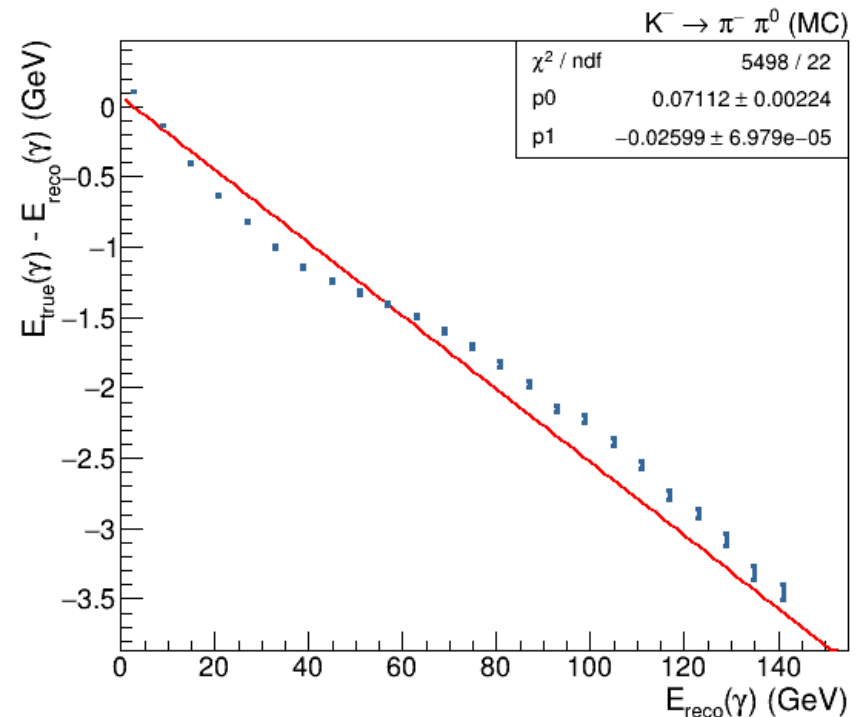
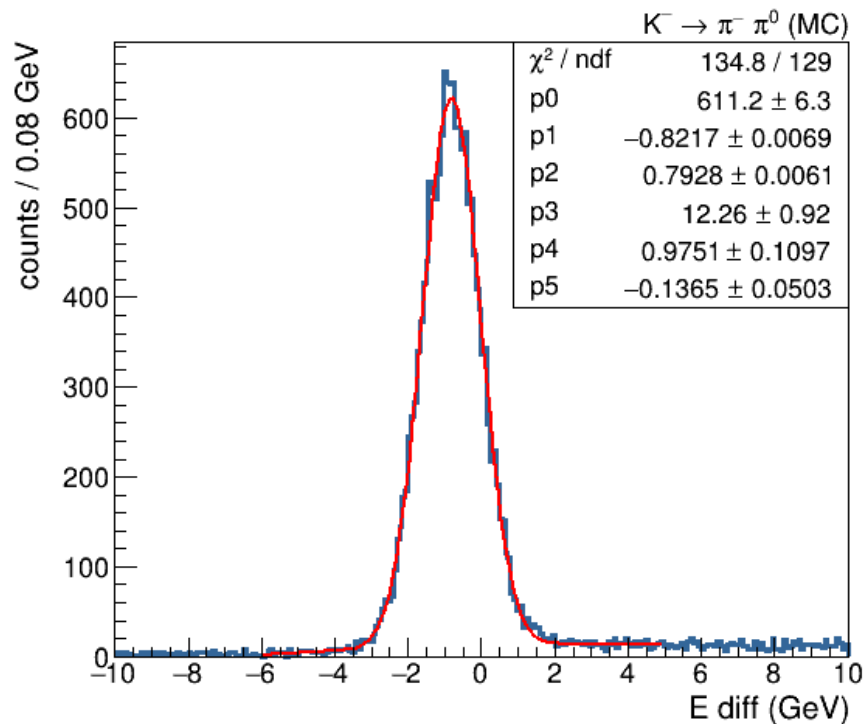
- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2



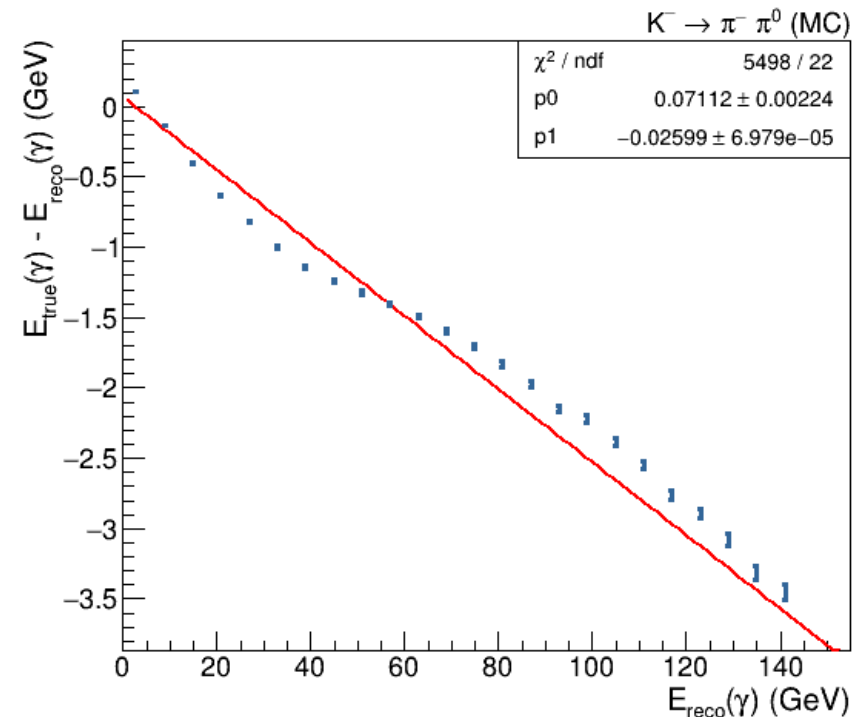
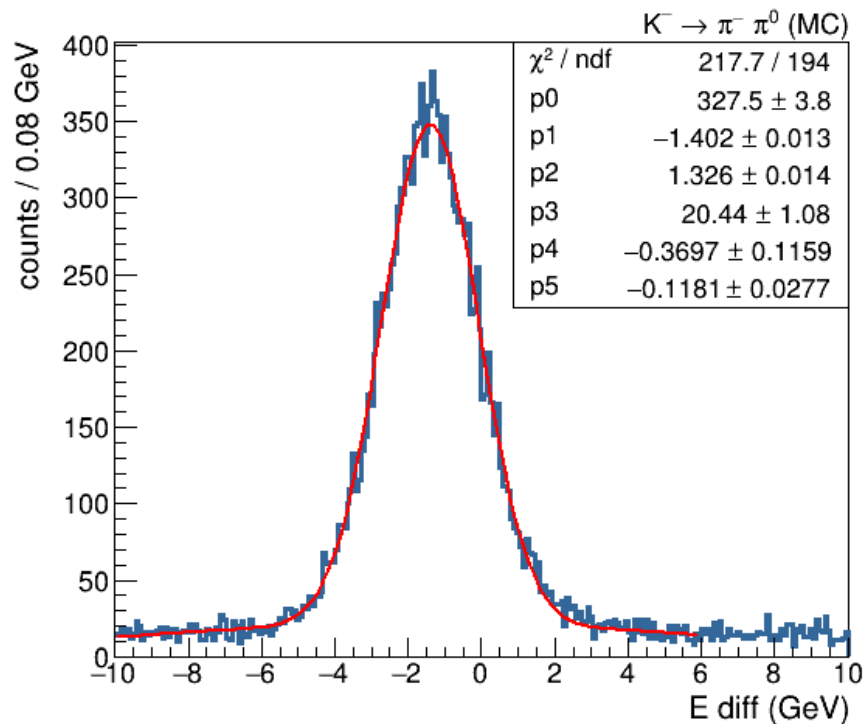
- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2



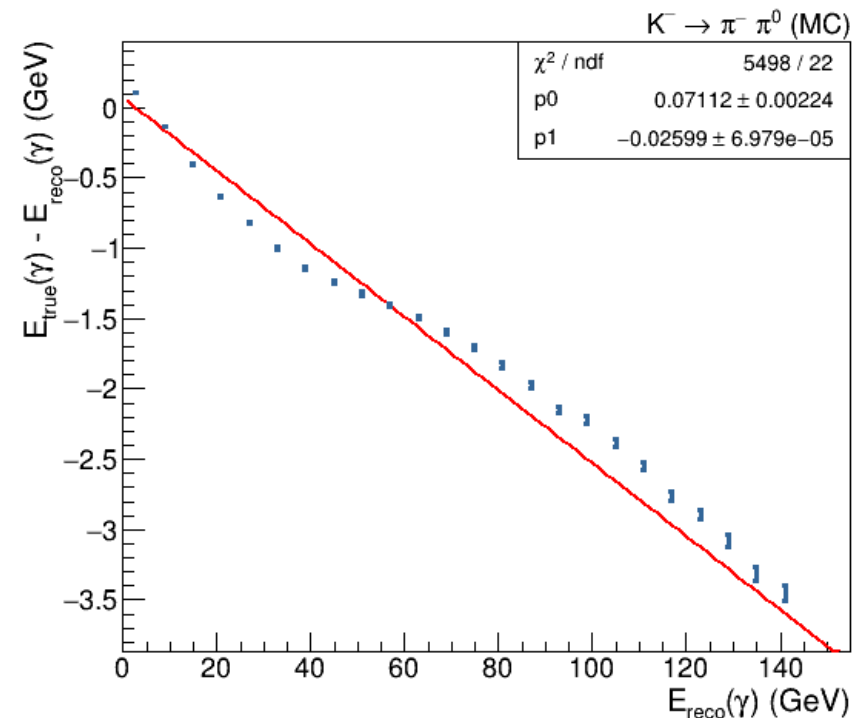
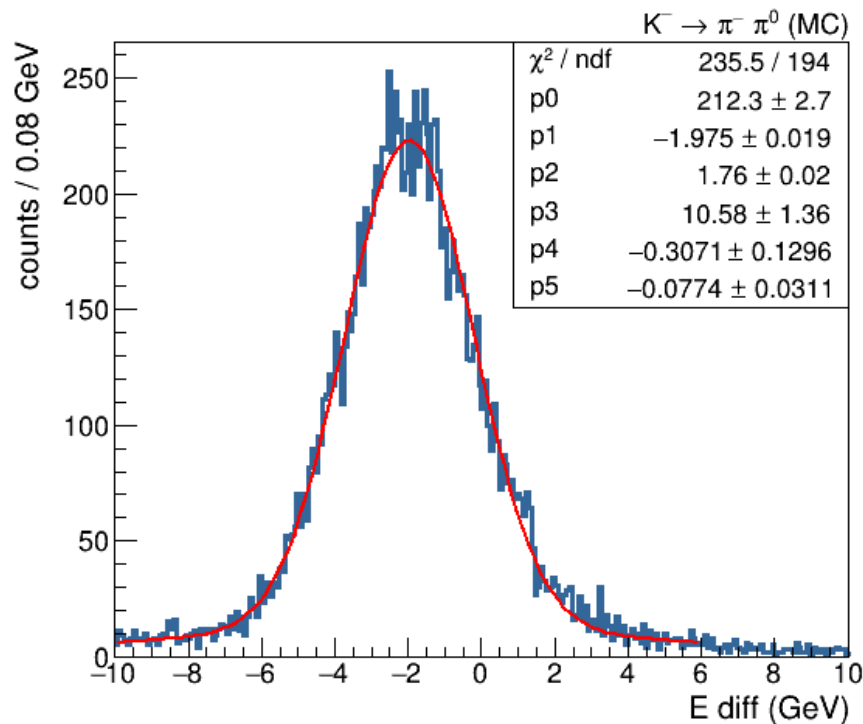
- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2



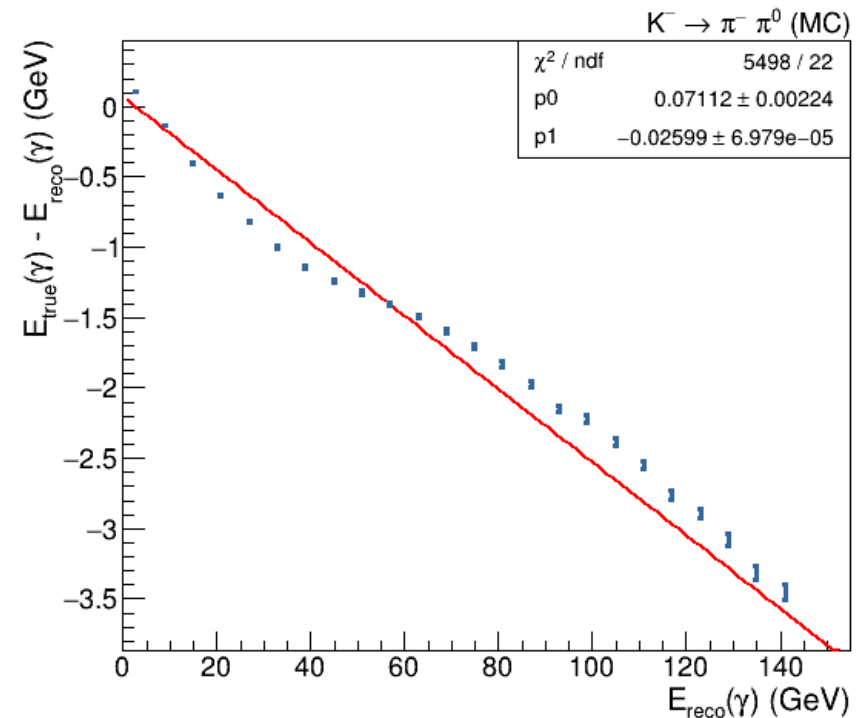
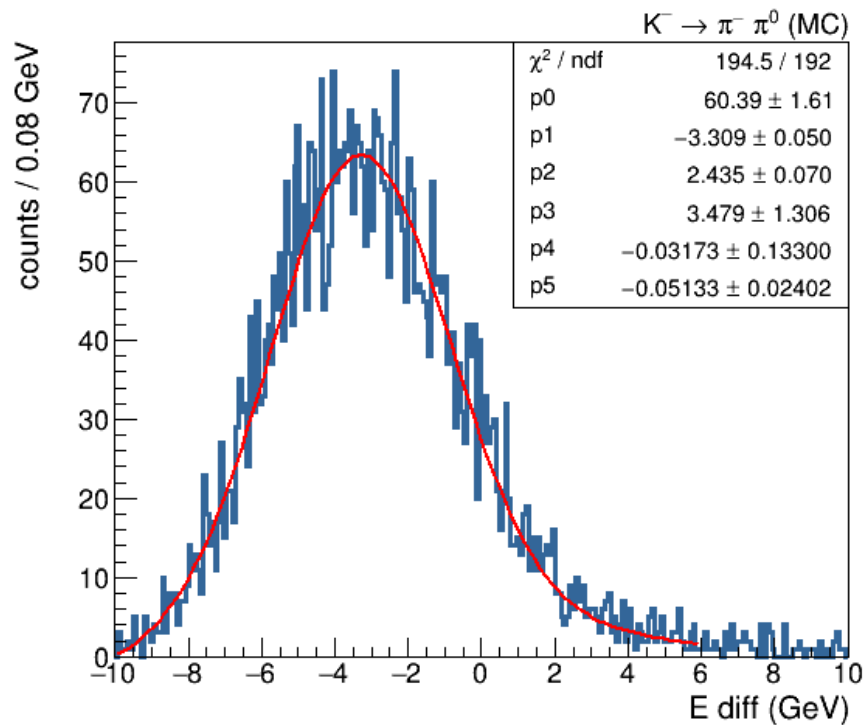
- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2



- Fit Plot in slices:
 - Minimum # of entries: 8000
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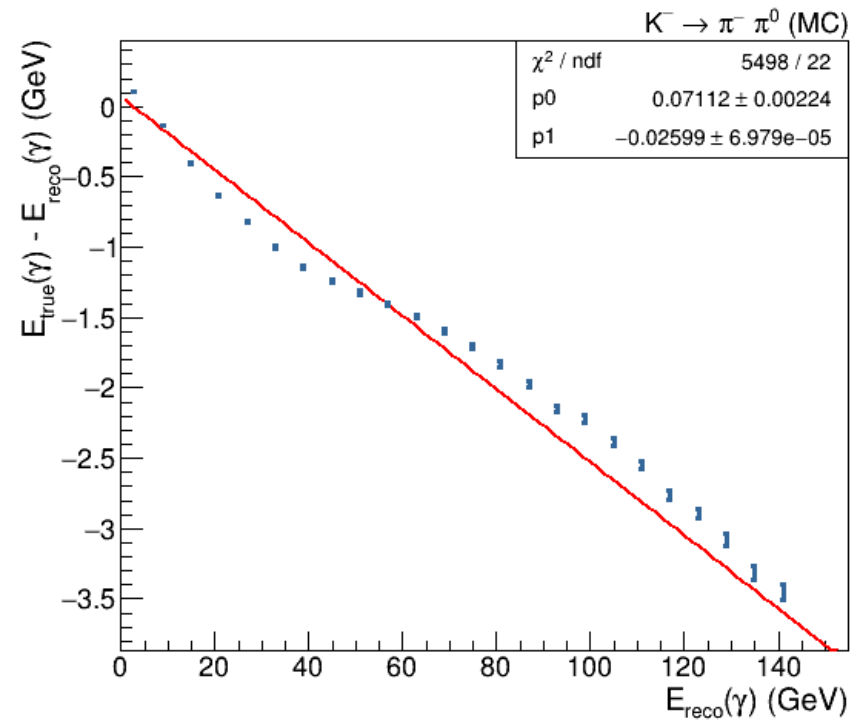
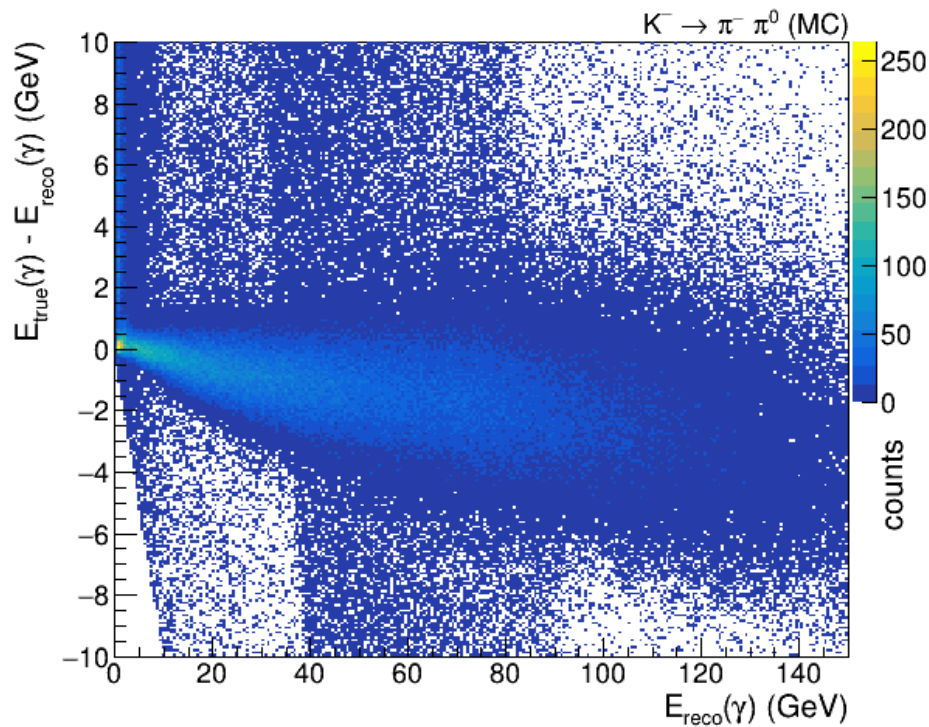
- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2



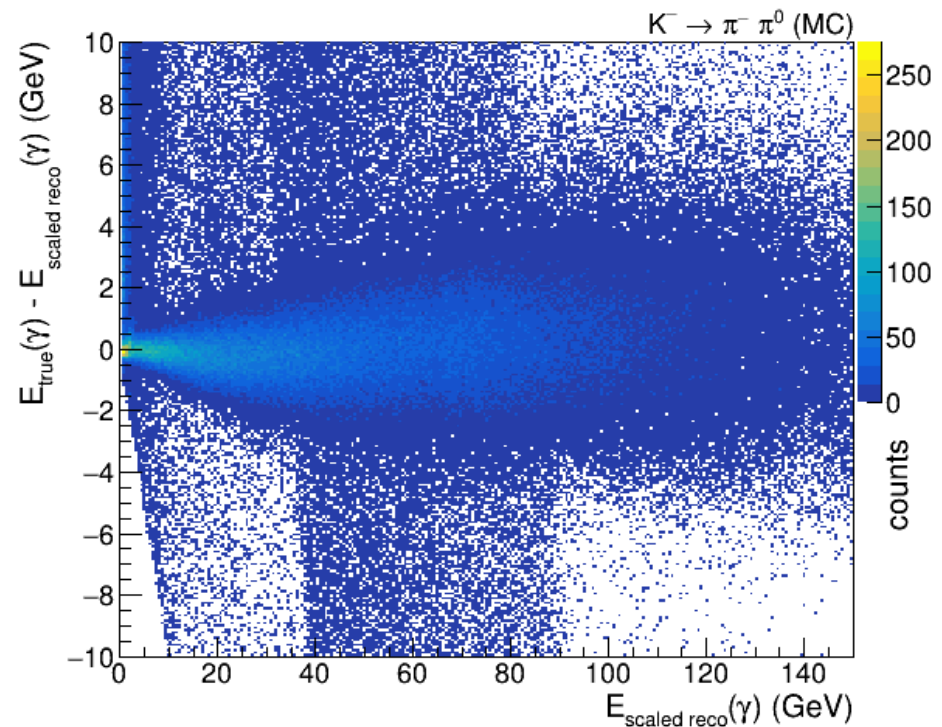
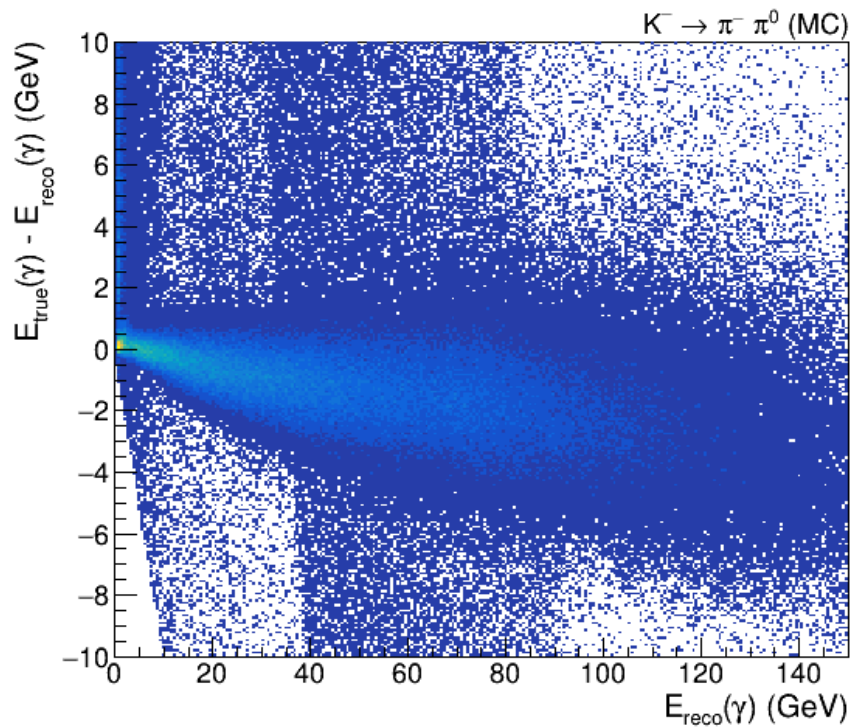
- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2

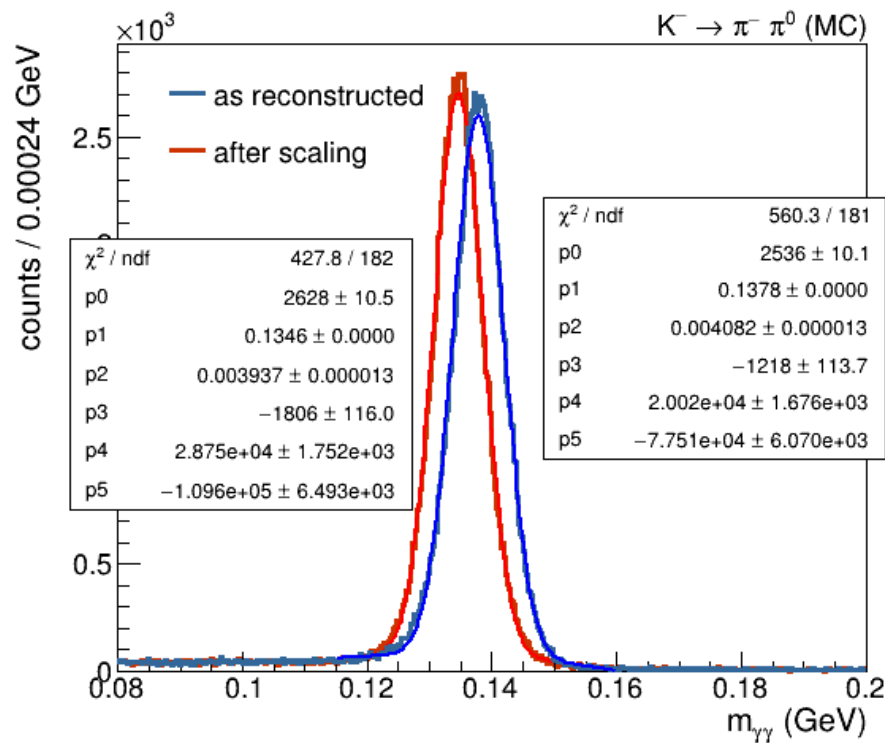
- Fit with linear function:

$$E_{true} - E_{reco} = p1 \cdot E_{reco} + p0$$



- Fit Plot in slices:
 - Minimum # of entries: 8000
 - Fit function: gaus + pol2





- As reconstructed:
 - Mean: (137.706 ± 0.013) MeV
 - Sigma: (4.419 ± 0.012) MeV
- After scaling:
 - Mean: (134.601 ± 0.013) MeV
 - Sigma: (4.213 ± 0.011) MeV