

Fun4All Calorimeter Plots: Investigating MIPs in Calorimeters

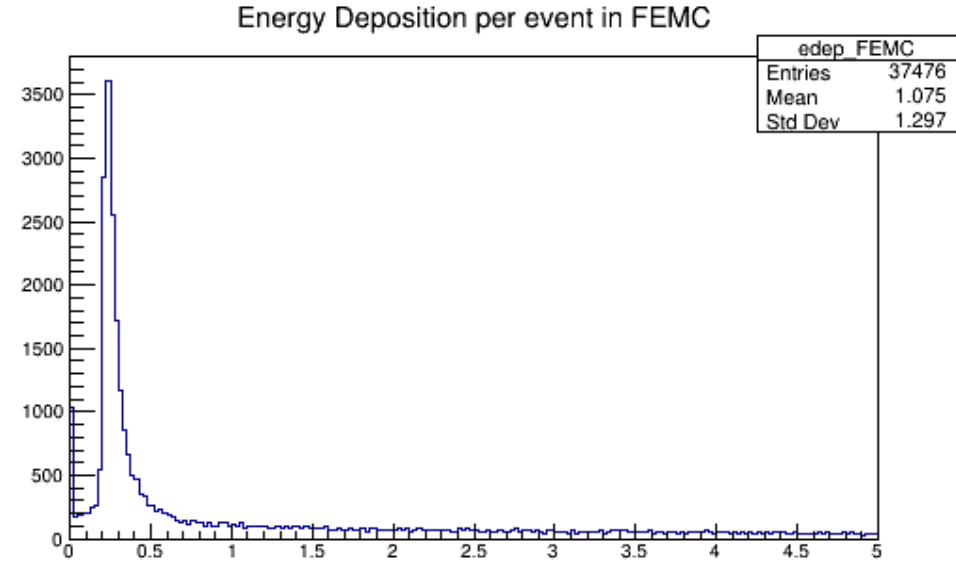
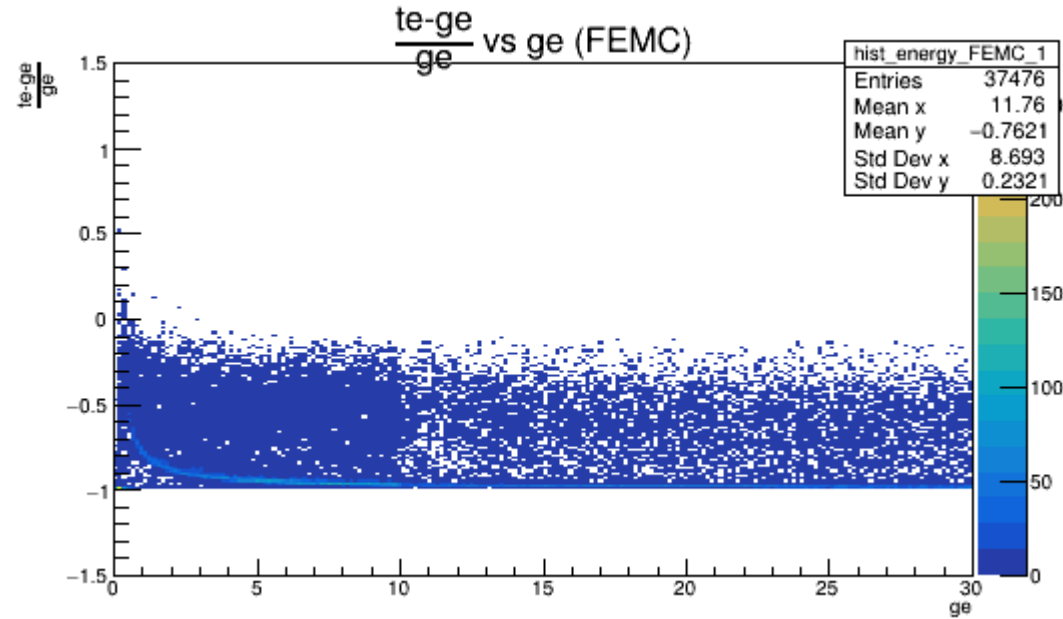
Simran
Lokesh Kumar
Panjab University, Chandigarh, INDIA

Fun4All QA Biweekly Meeting
October 22, 2021

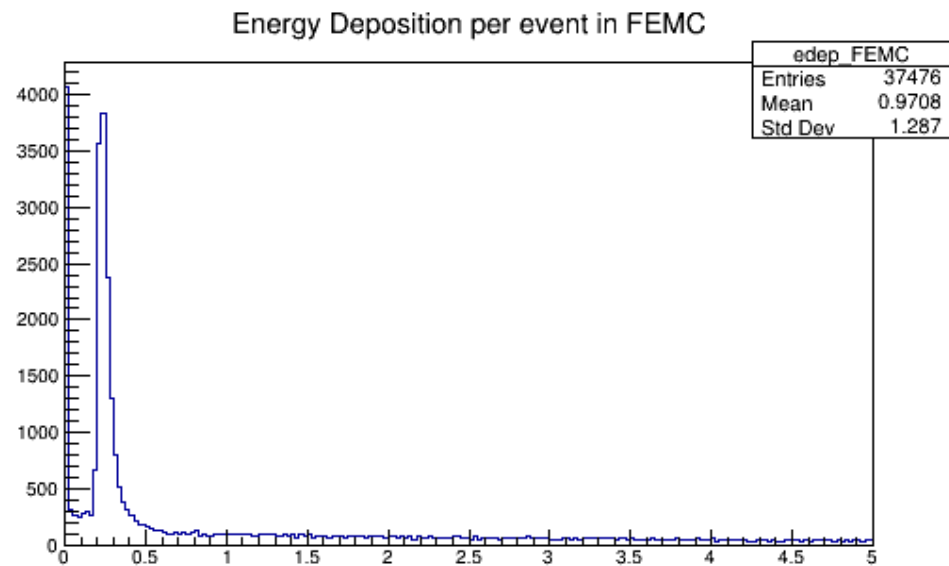
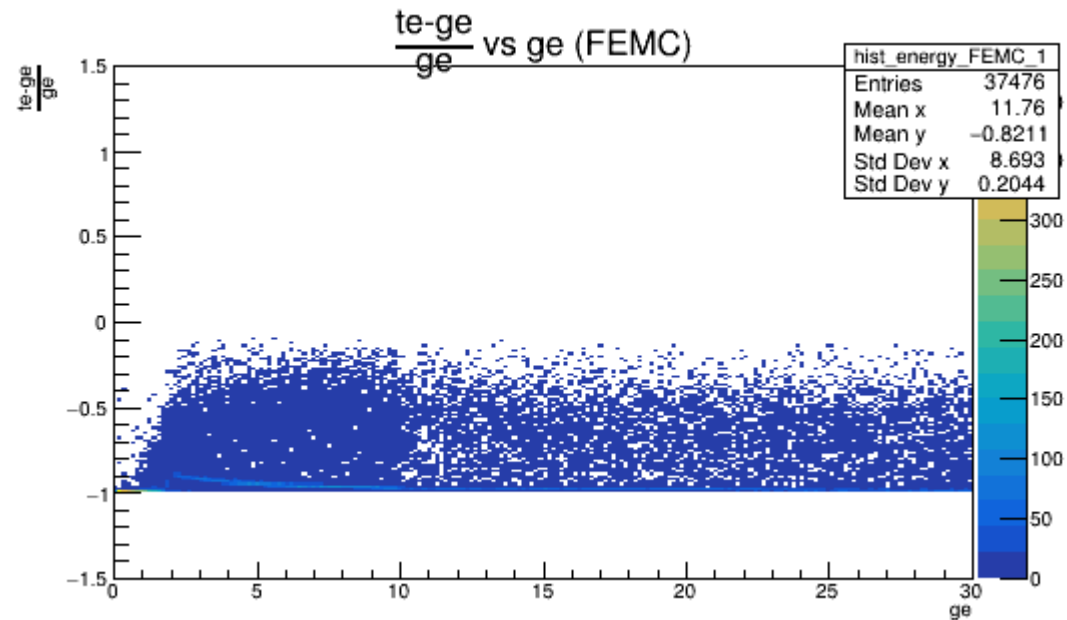
Contents:

- FEMC(π^-) plots: Comparison between cuts
- Muon (μ^-) Energy Deposition

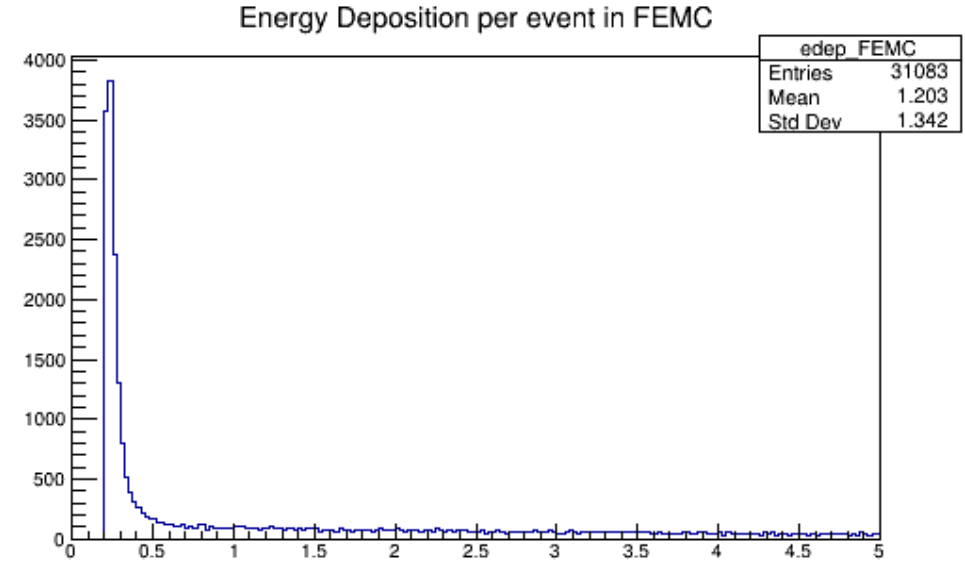
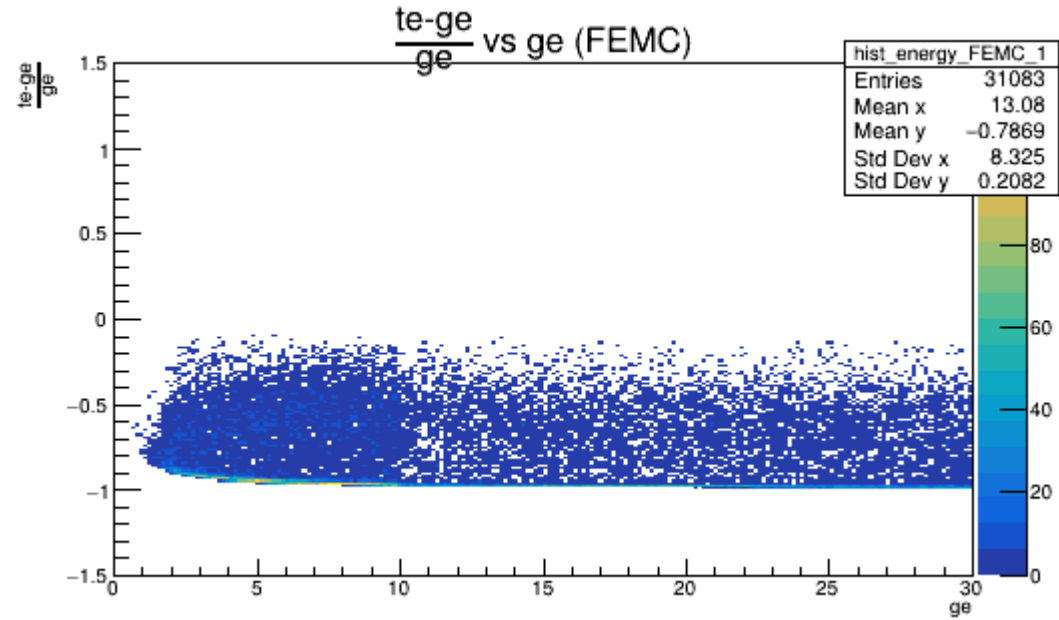
Raw energies: No cut applied



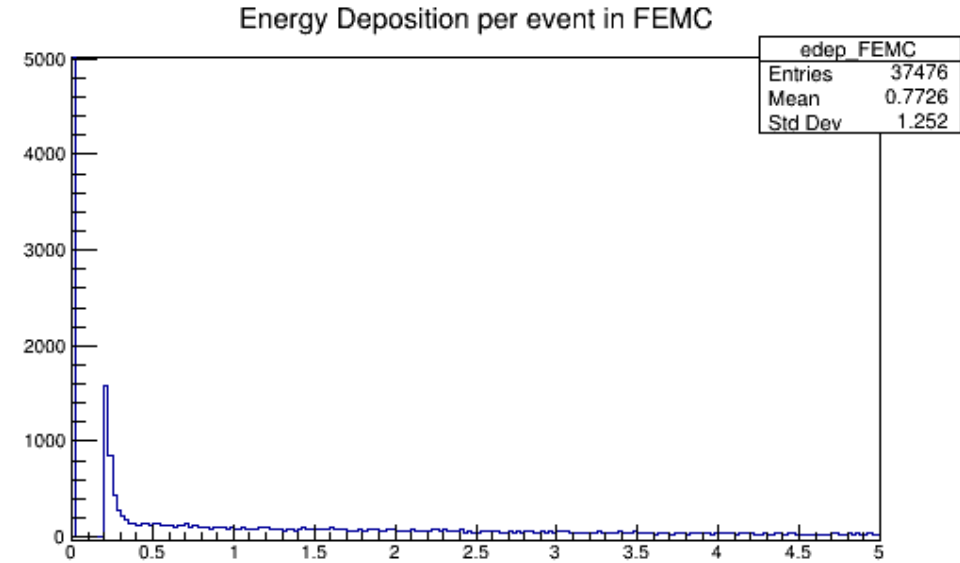
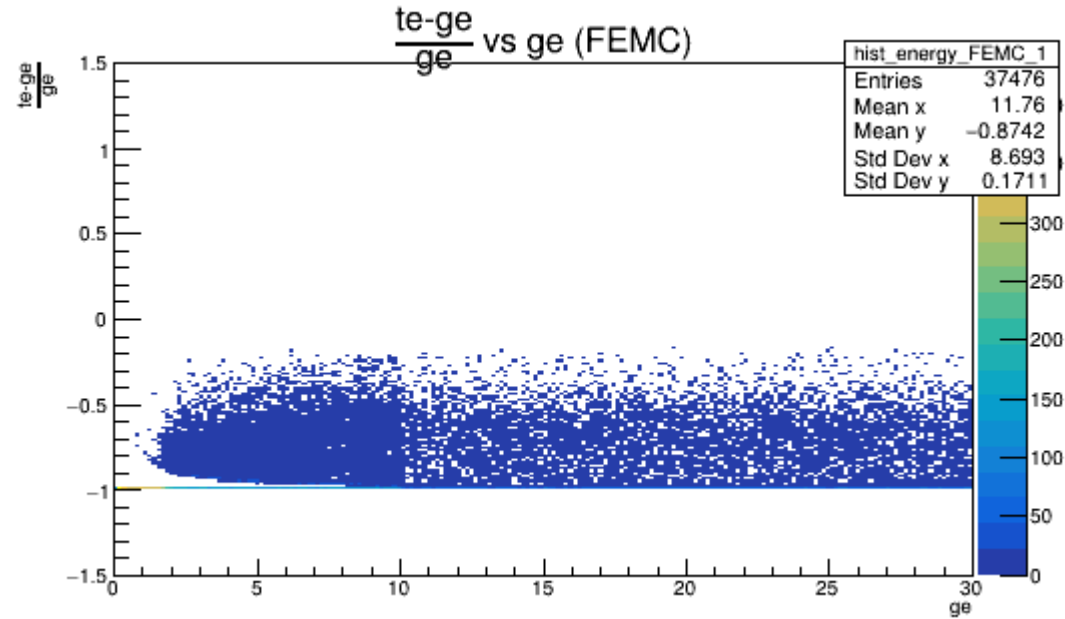
Case 1: Only circular cut applied



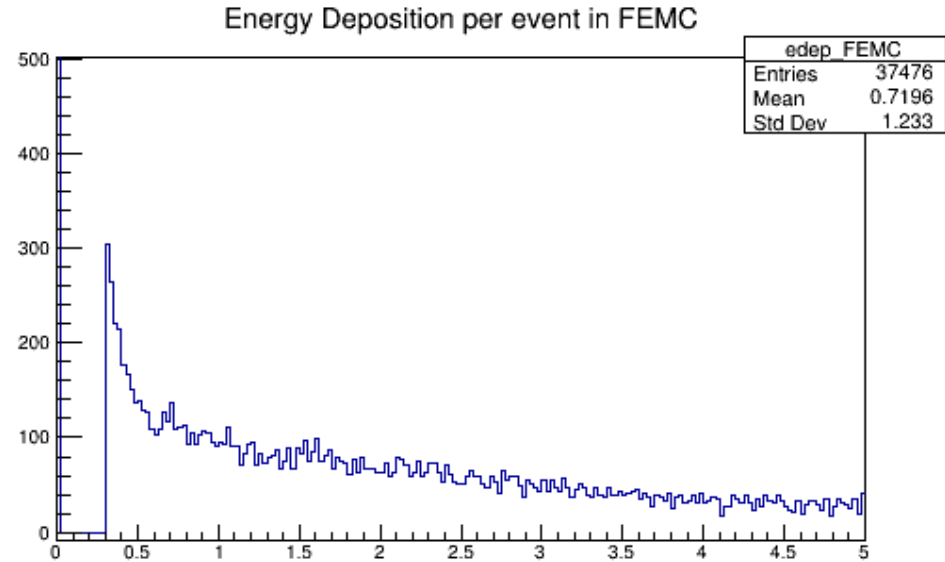
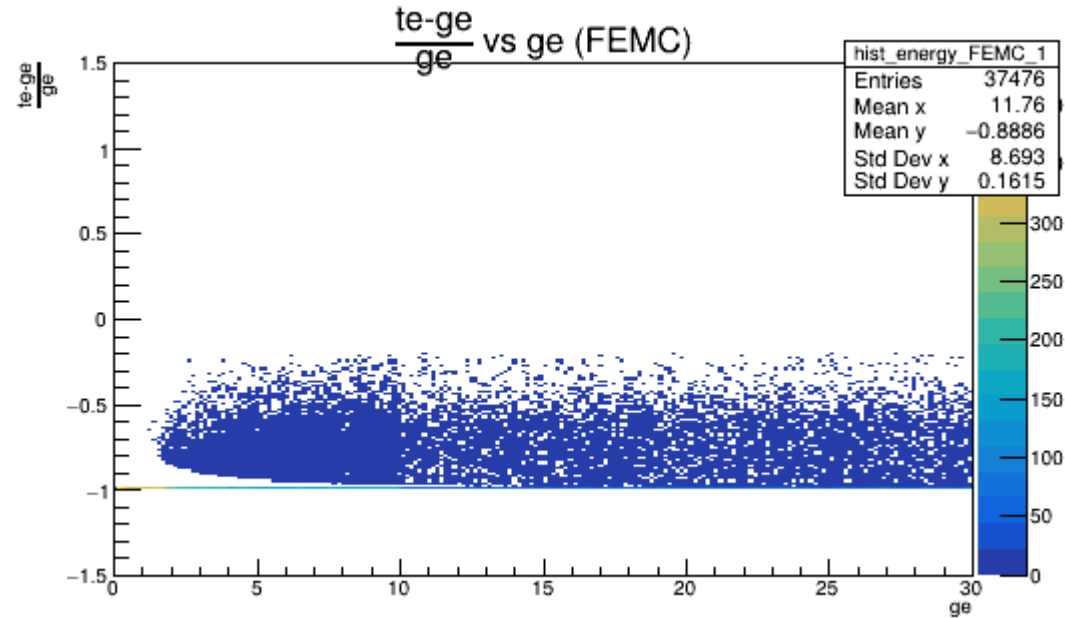
Case 2: Circular cut + aggregate tower cut(200MeV)



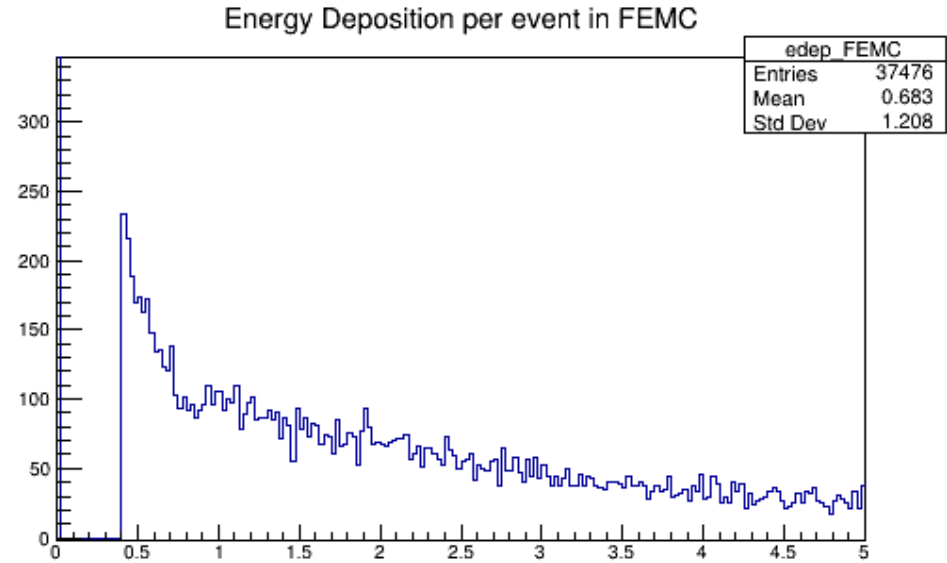
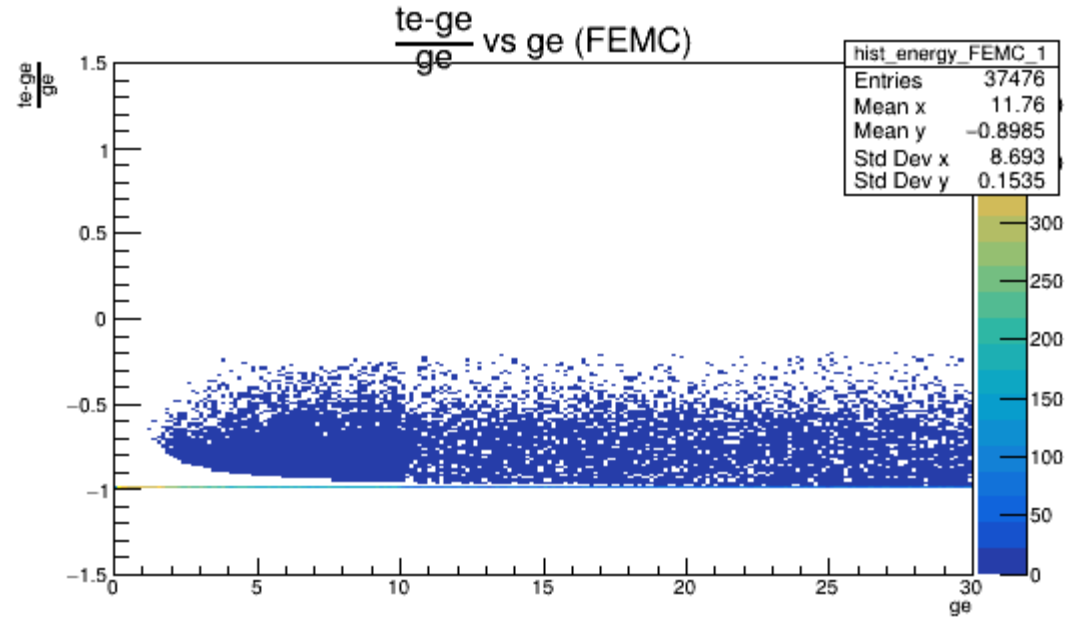
Case 3: Circular cut + individual tower cut (200MeV)



Case 4: Circular cut + individual tower cut (300MeV)

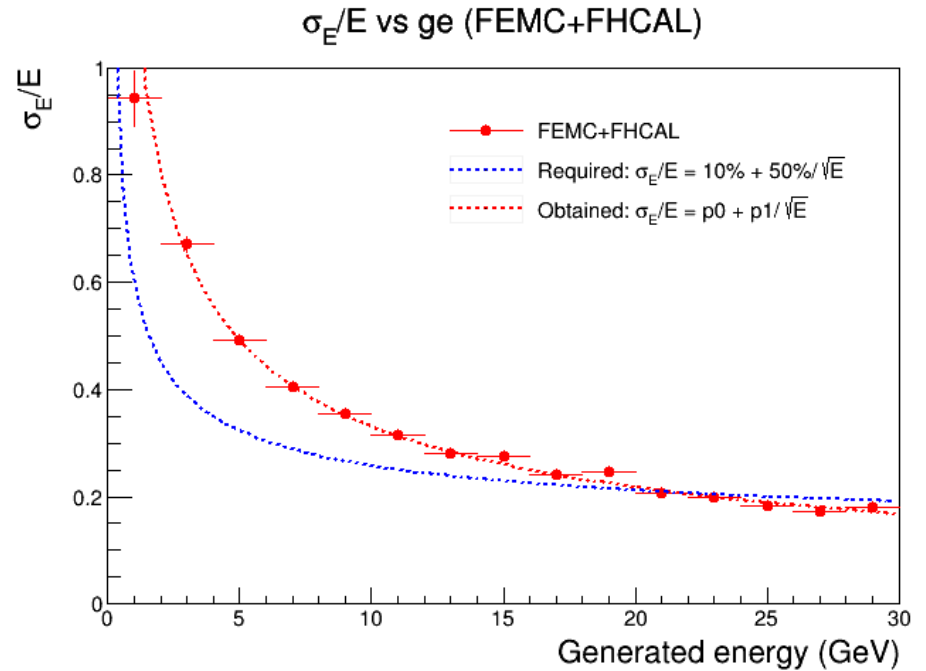
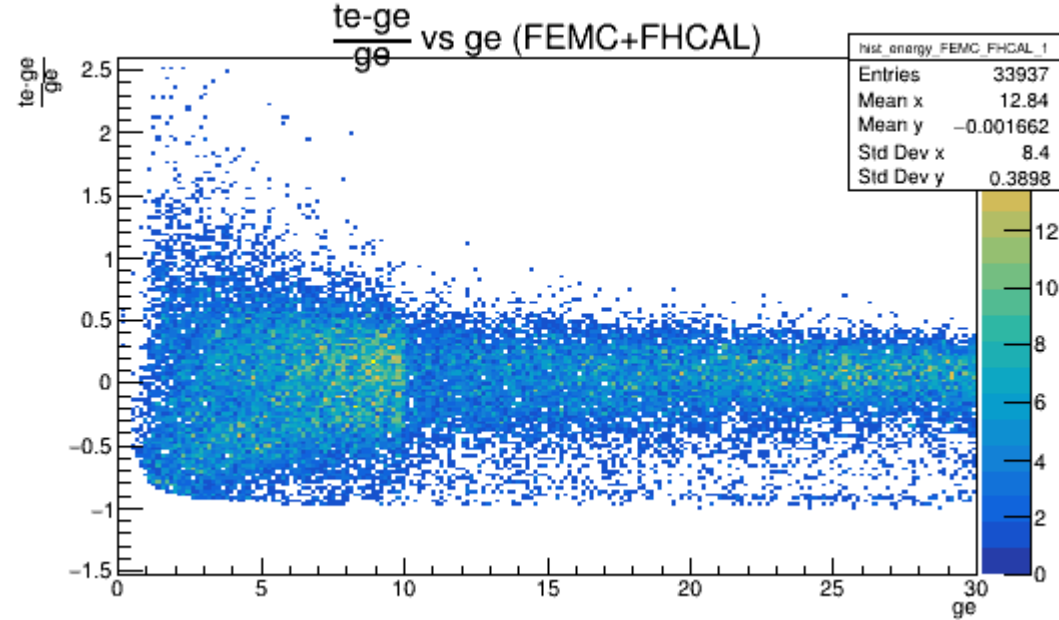


Case 5: Circular cut + individual tower cut (400MeV)



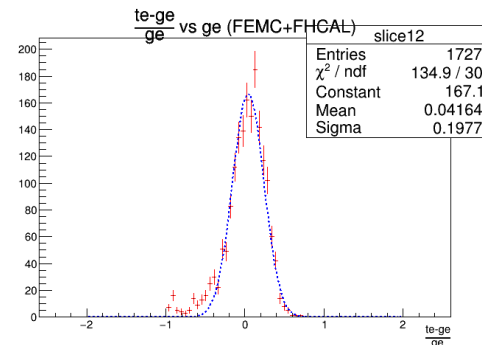
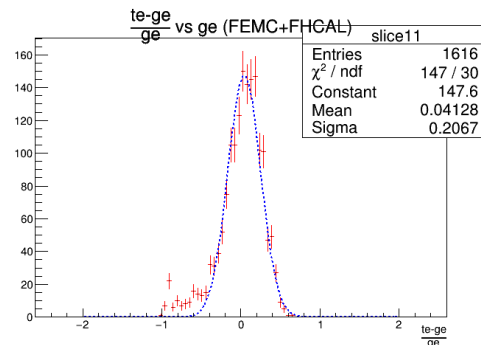
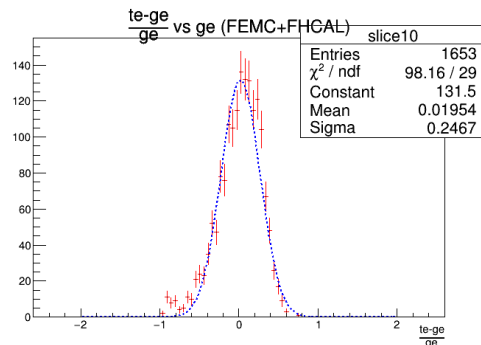
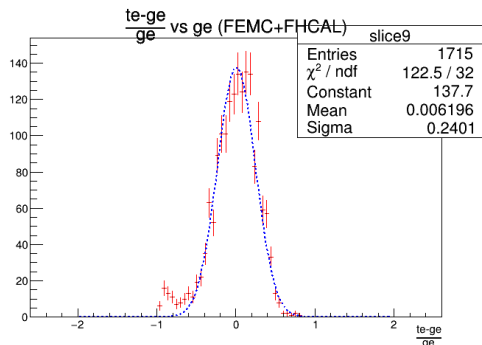
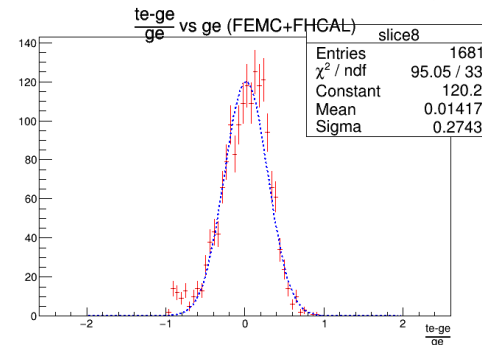
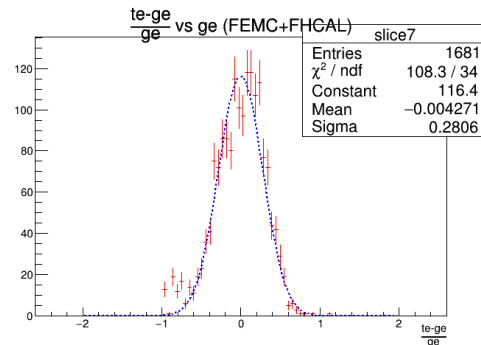
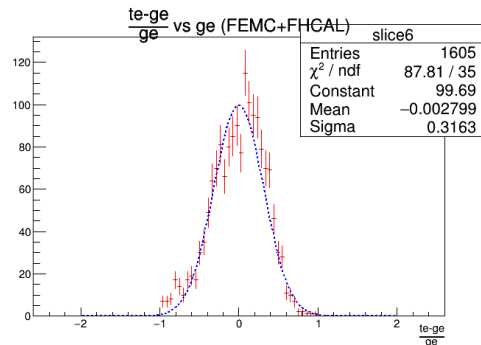
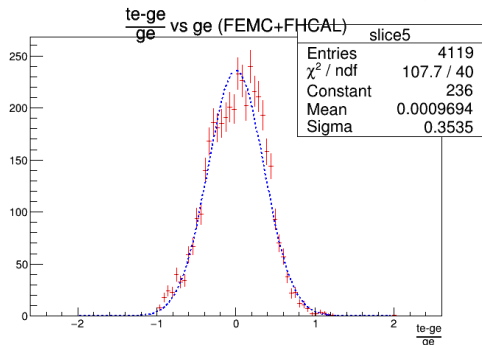
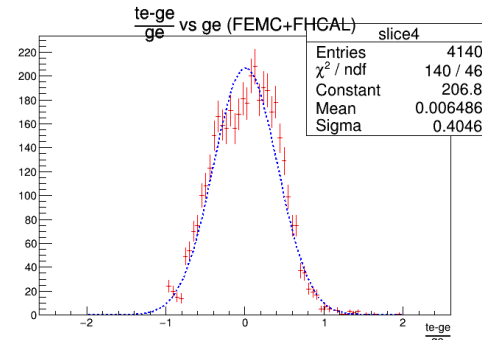
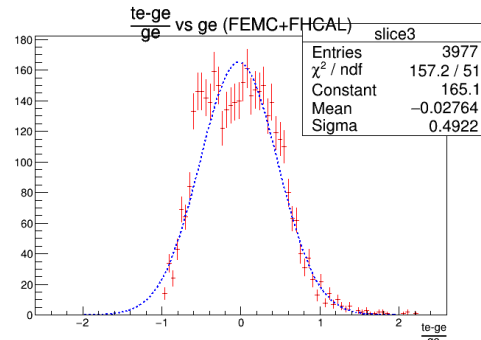
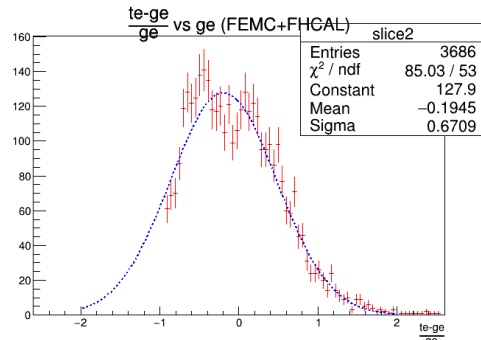
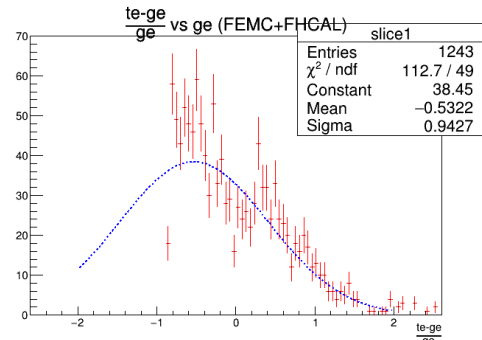
FEMC+FHICAL After Calibration

Using 400MeV individual tower cut & 200MeV aggregate cut

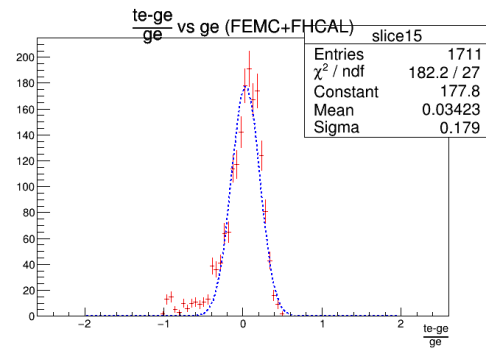
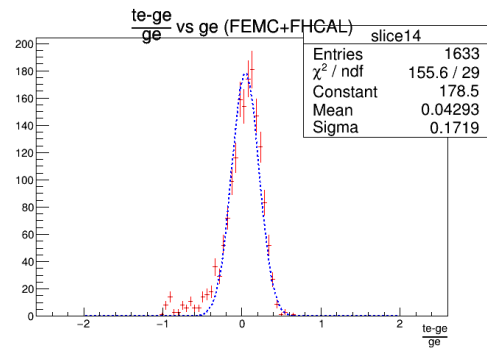
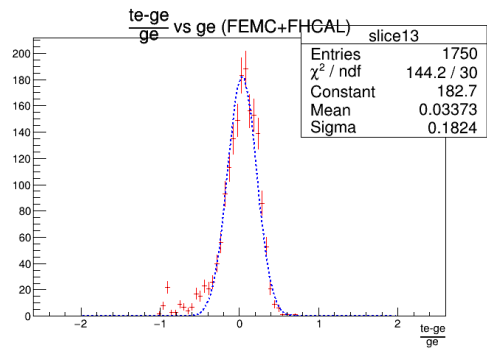


$$\sigma_E/E = -5.6\% + 122.5\%/ \sqrt{E}$$

FEMC+FHCAL: Gaussian fits (after calibration):

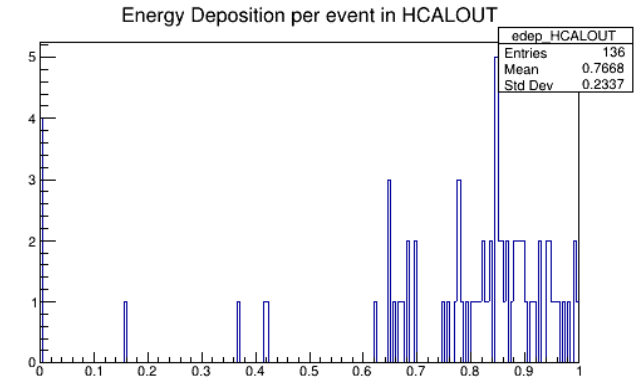
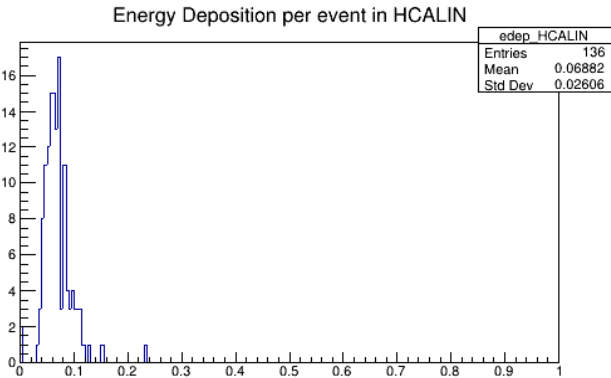
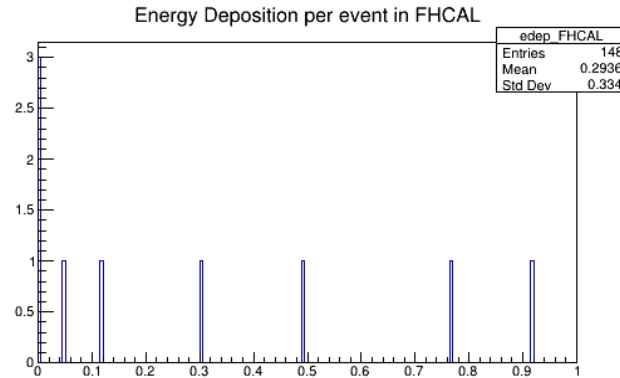
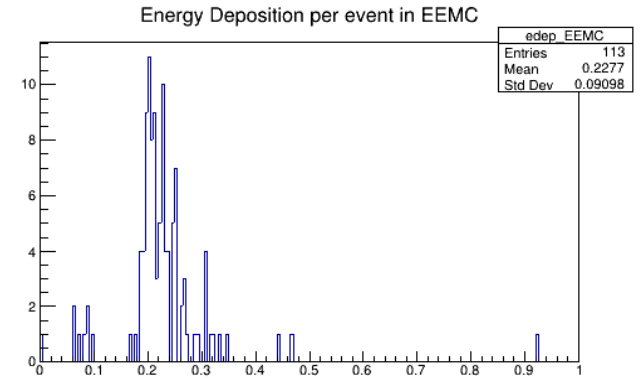
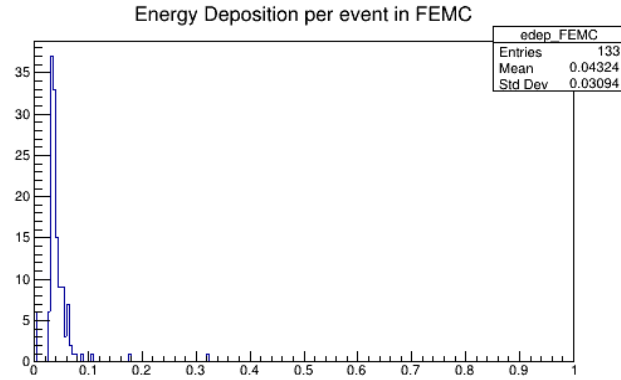
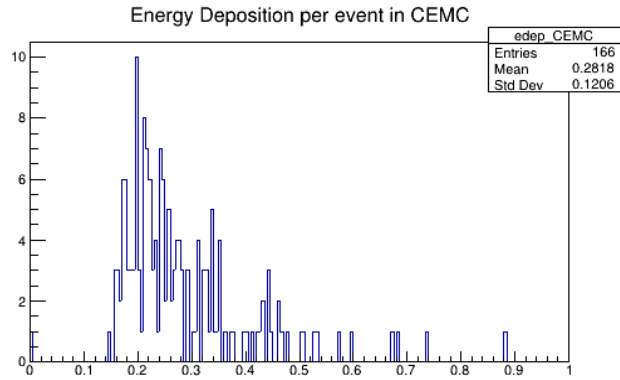


FEMC+FHGAL: gaussian fits (after calibration):



Muon Energy Deposition in calorimeters per event

Events : 1000 ; Generated energies: 0-30 GeV



THE END