

Fun4All Calorimeter Plots: Pion: Forward Energy Resolution with updated sf in FEMC

Simran
Lokesh Kumar
Panjab University, Chandigarh, INDIA

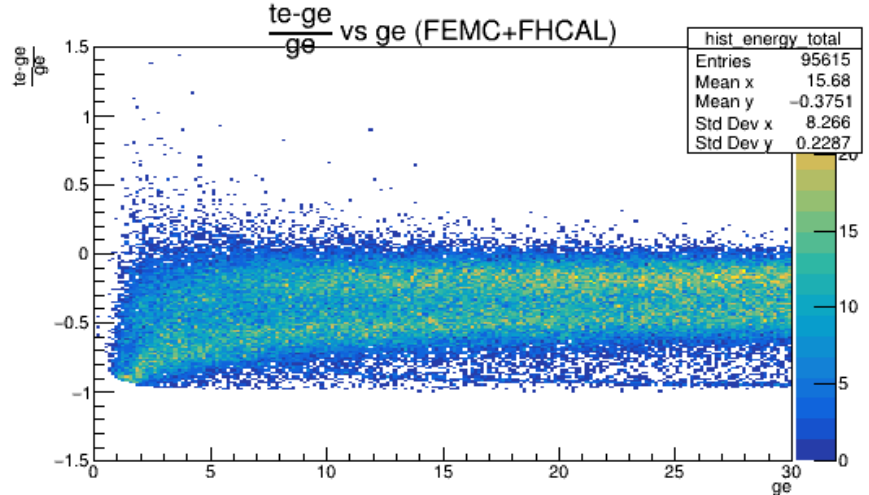
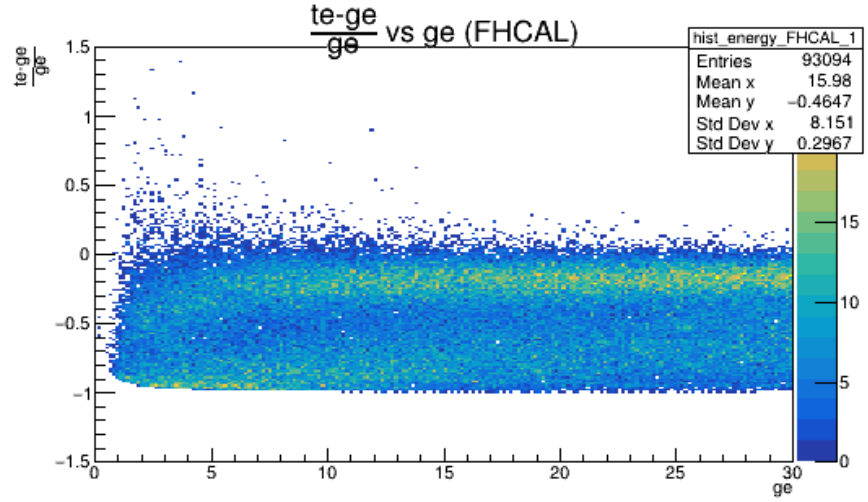
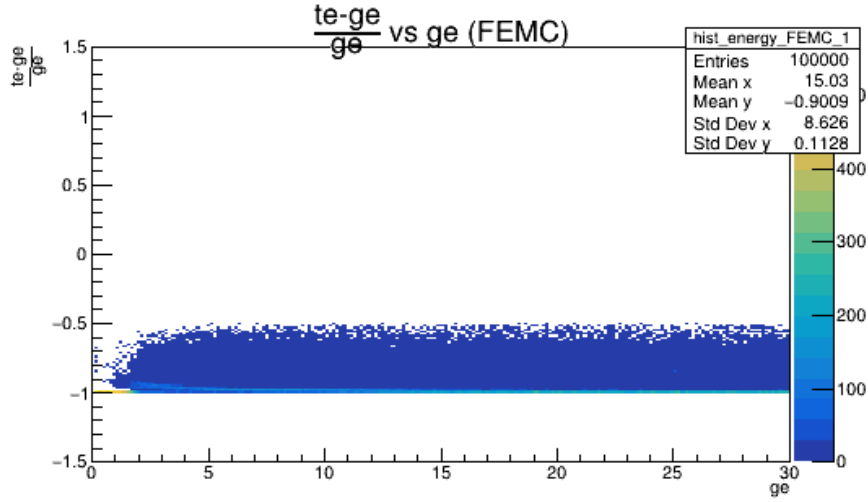
Fun4All QA Biweekly Meeting
June 17, 2022

Specifications:

SIMULATION & ANALYSIS DETAILS:

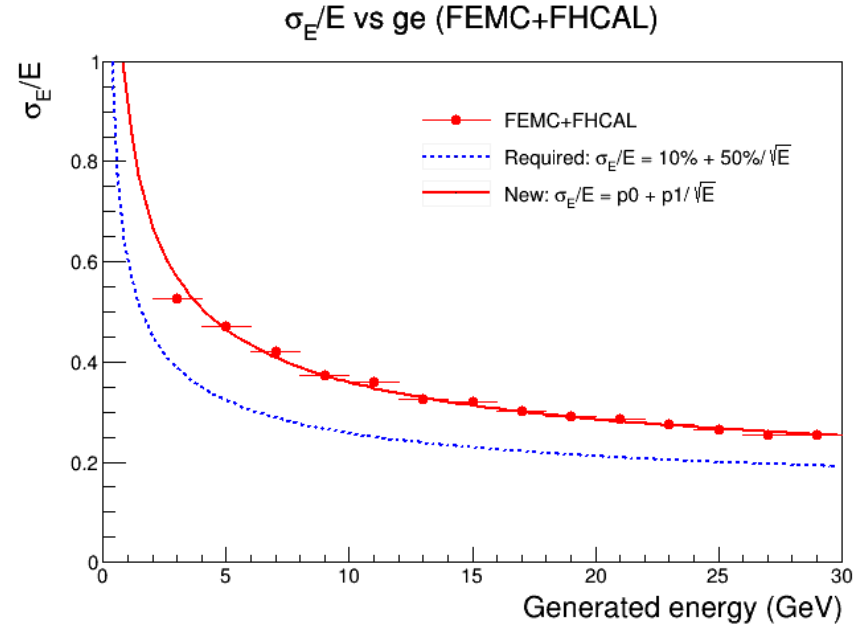
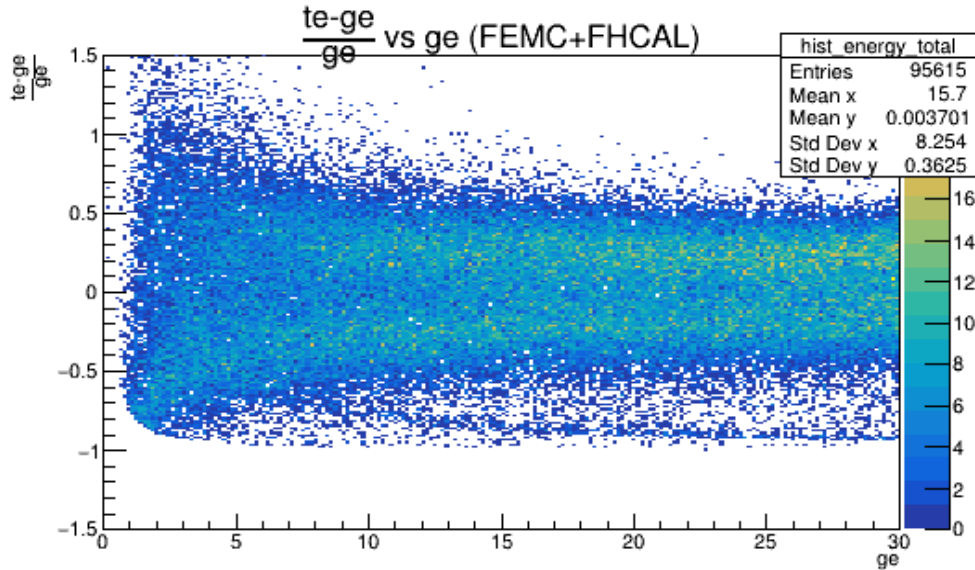
- Particles: pi-
- Events: 100000 (0-30 GeV)
- **Various Cuts used:**
 - Pseudorapidity cuts on each calorimeter:
 - Pion:
 - Forward Region: $\eta = 1.32$ to 3.14
 - Clustering cut based on theta and phi values
 - Theta-dependent energy cut on individual tower energies
 - 100MeV cut on aggregated tower energies (FEMC+FHCAL) for each event

Forward Region: RAW & UNCALIBRATED



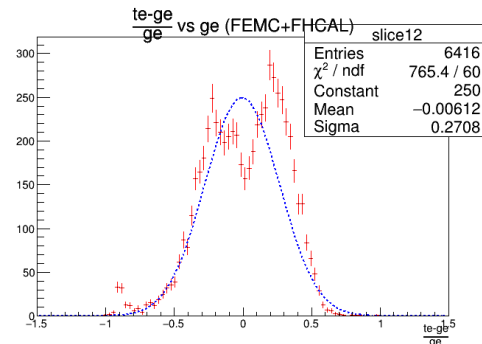
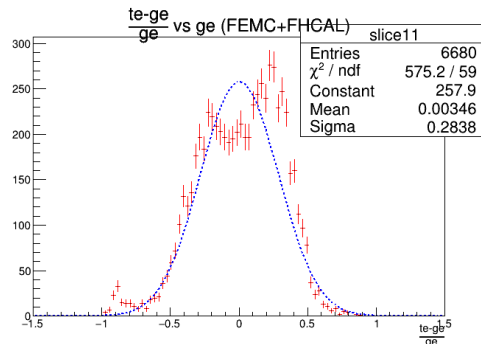
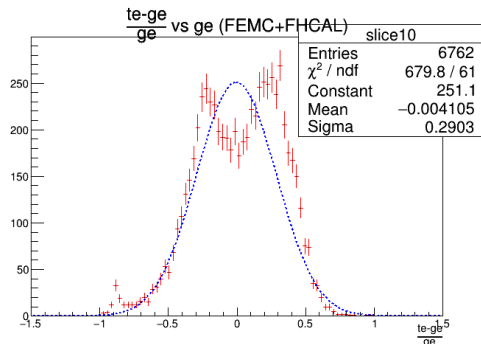
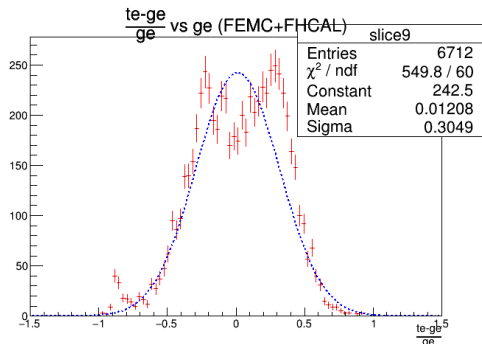
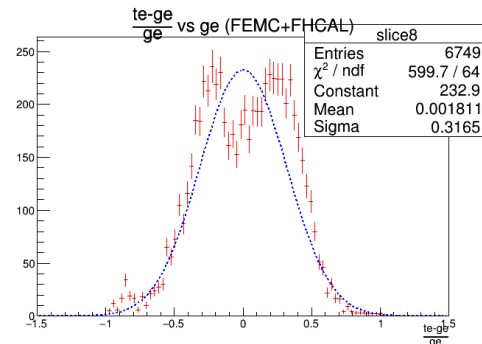
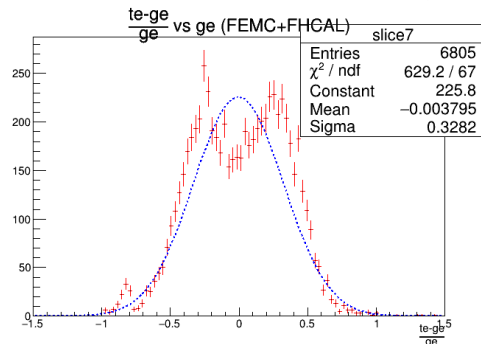
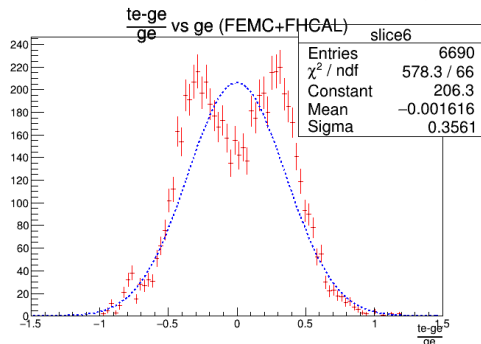
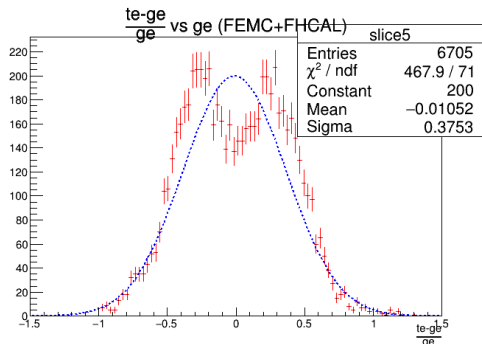
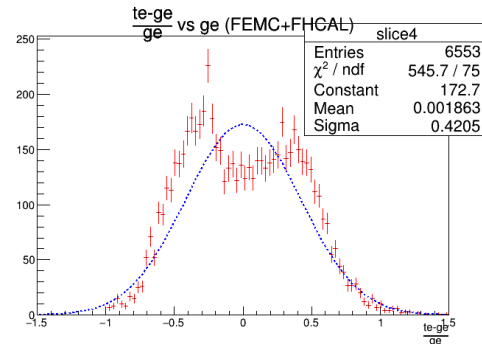
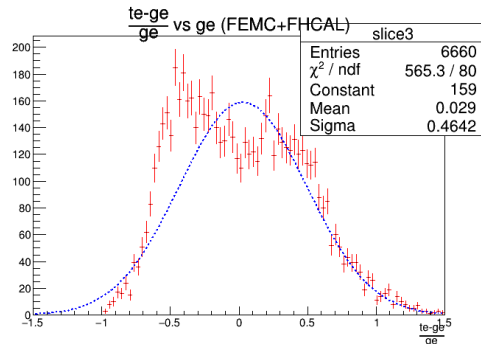
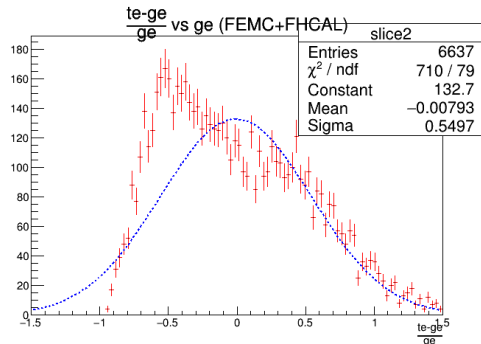
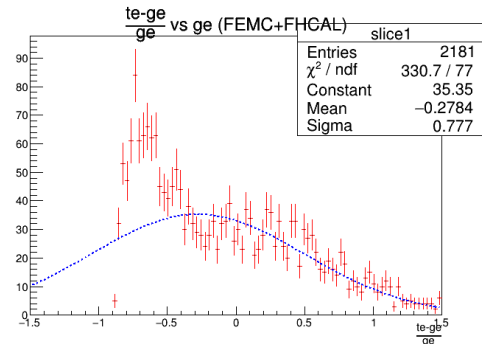
Forward Region: AFTER CALIBRATION

- aggregated (FEMC+FHCAL) energies calibrated using fit function obtained from **means from raw Gaussian fits** of $(te(FEMC+FHCAL)-ge)/ge$

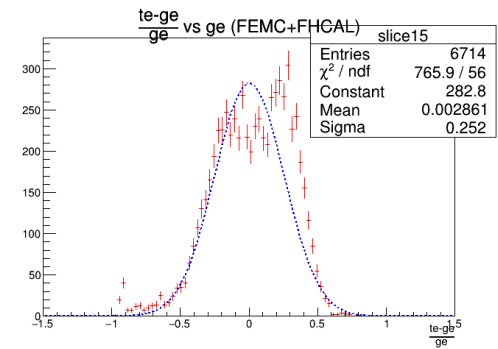
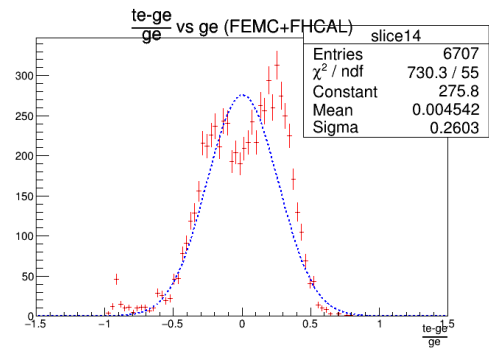
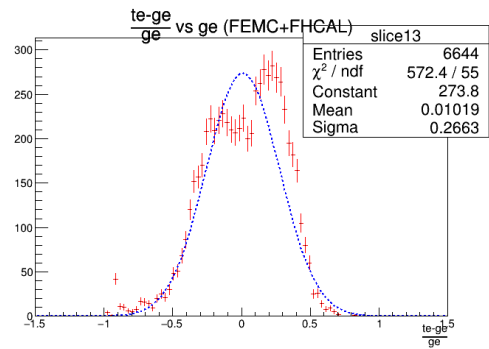


$$\sigma_E/E = 10.7792\% + 79.8501\%/ \sqrt{E}$$

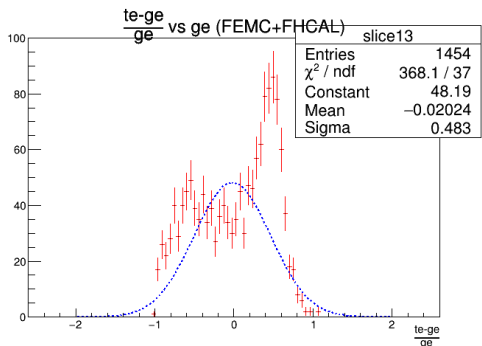
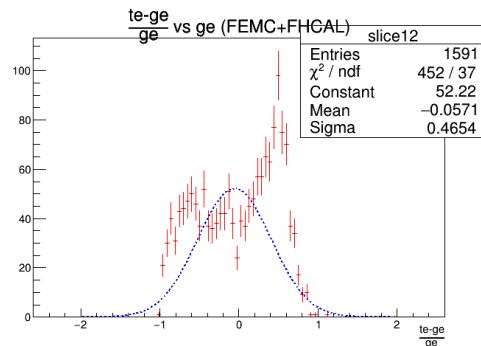
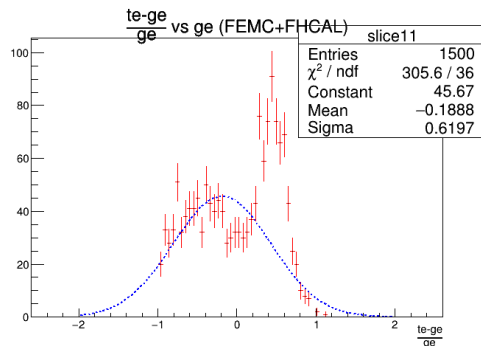
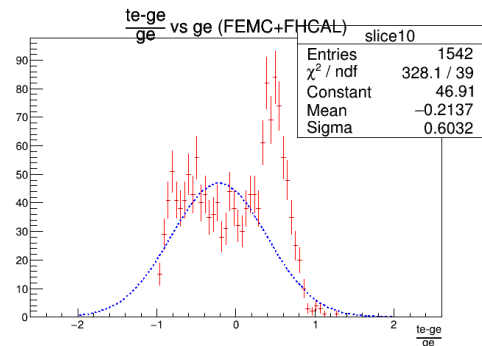
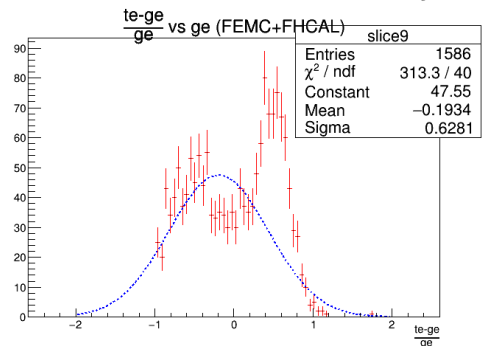
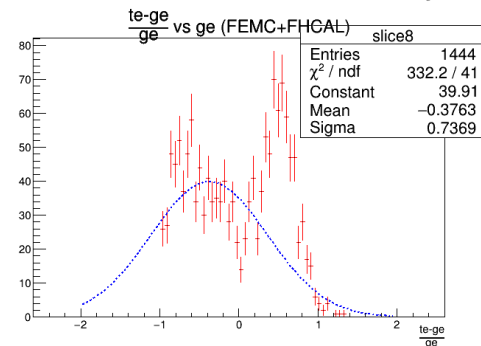
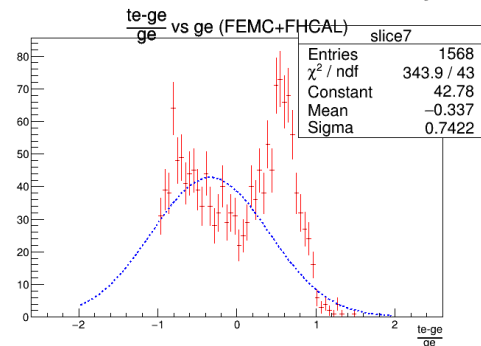
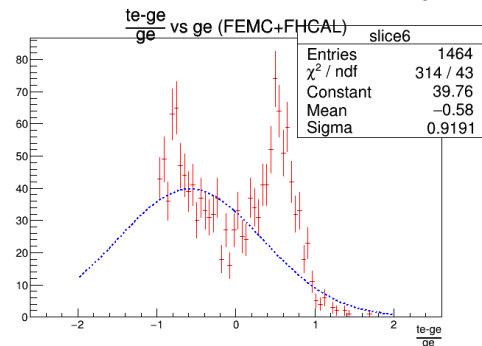
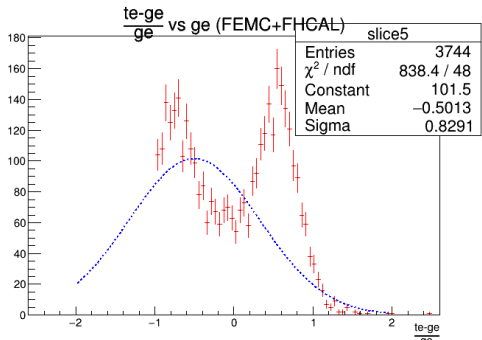
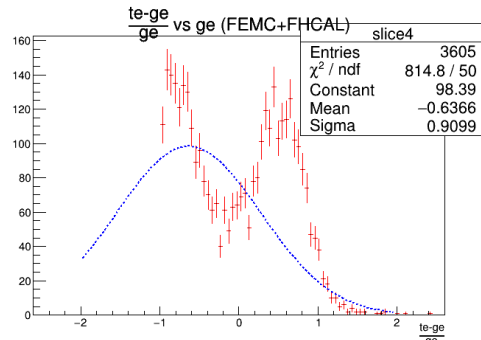
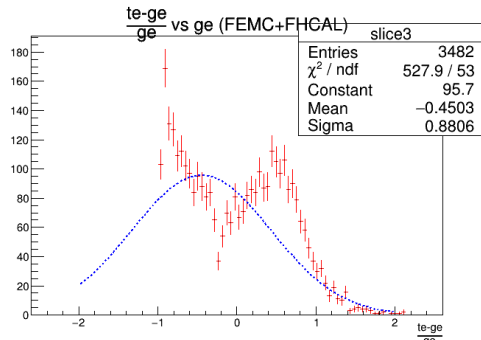
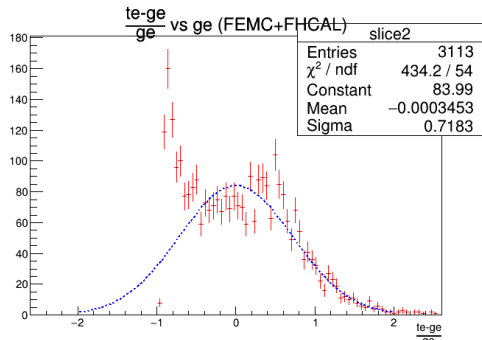
FEMC+FHCA: Gaussian fits



FEMC+FHGAL: gaussian fits



FEMC+FHCAL: Gaussian fits (OLD RESULTS)



THANKS!