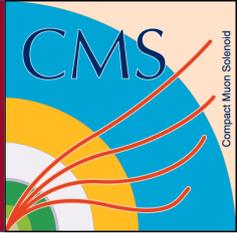




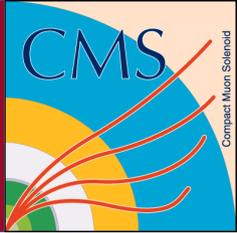
# HGCaI CMSSW



## HGCHE Calibration with no HGCEE V5 Geometry

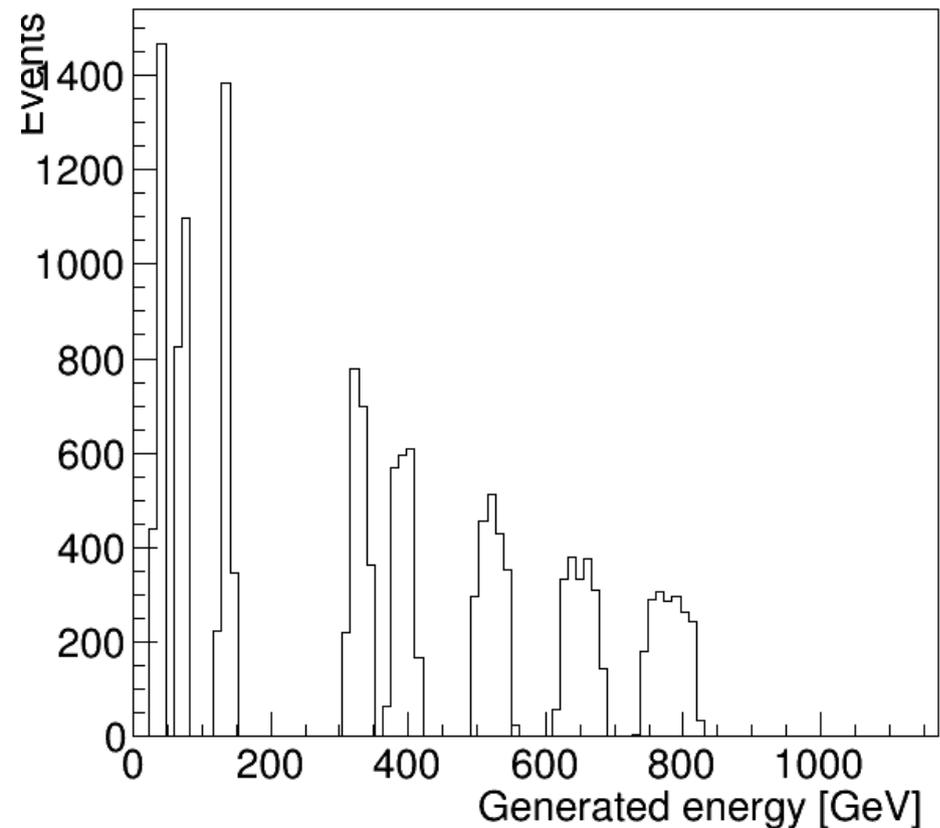


# Process



- Using v5 geometry with hgcEE set to vacuum
- Single particle pion gun at  $\eta=2.5$
- No requirement for start of shower.
- 

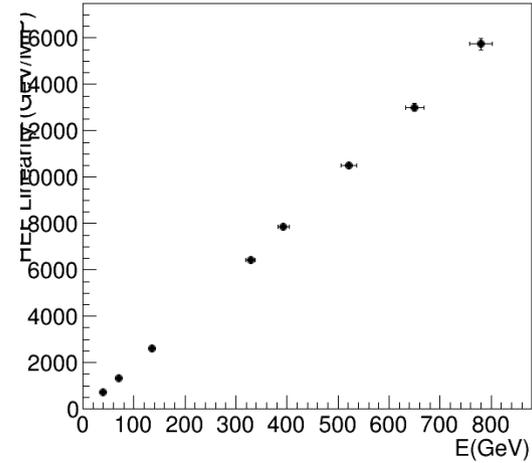
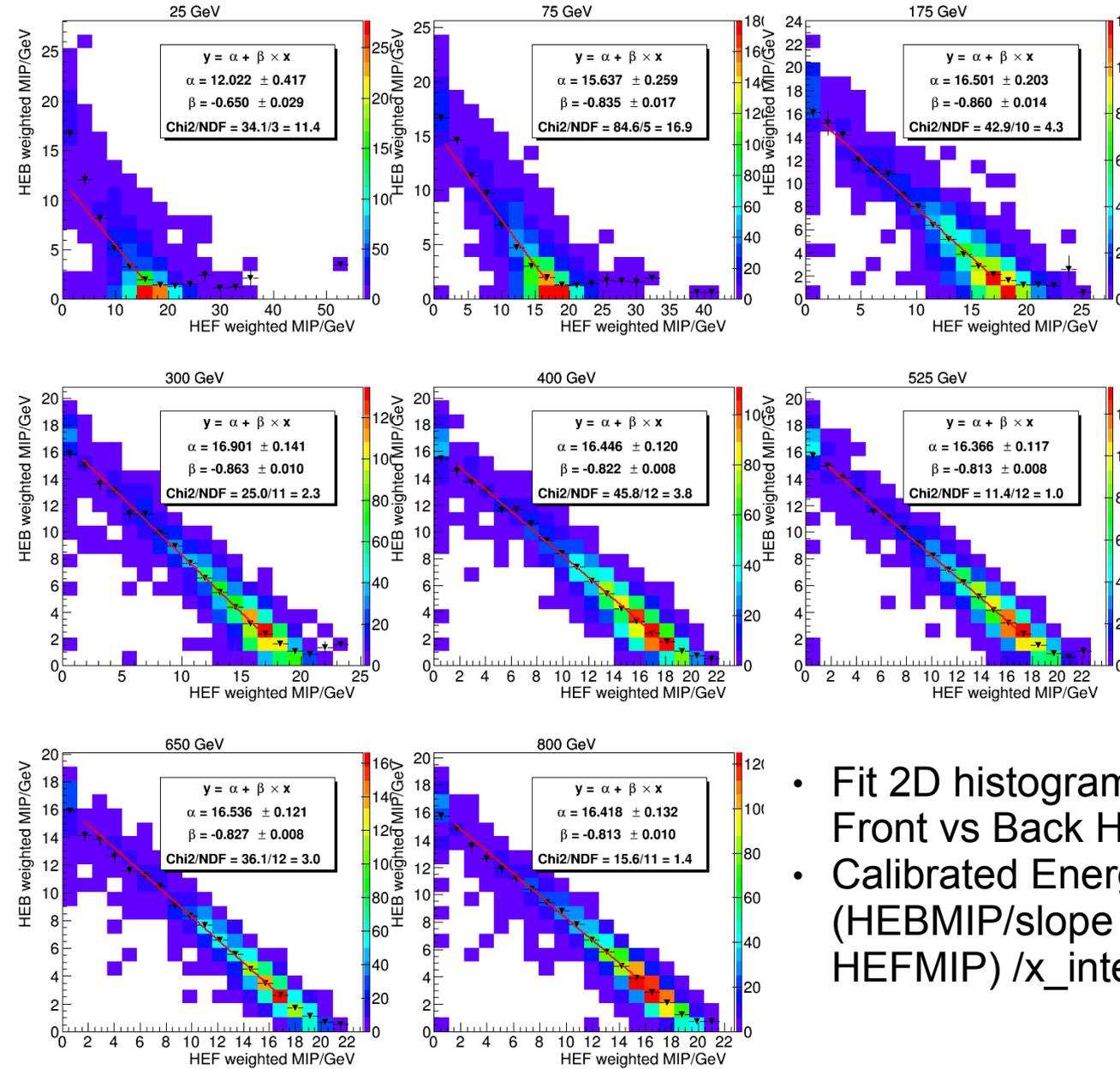
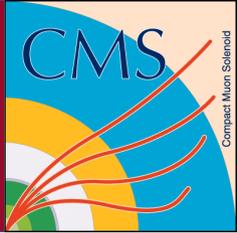
Gen Energy



- Weights – Front = 3.1, Back = 5.22
- MIP – Front = 85keV, Back = 1500keV

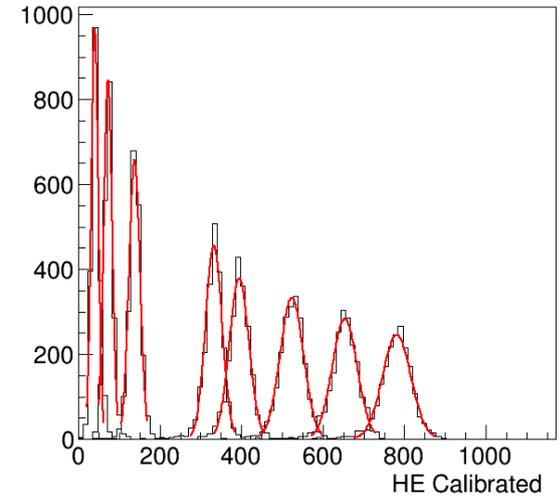


# Calibration Fits



Linearity =  $19.8 \pm 0.1$  wMip/GeV  
 F-B Cal =  $0.826 \pm 0.004$

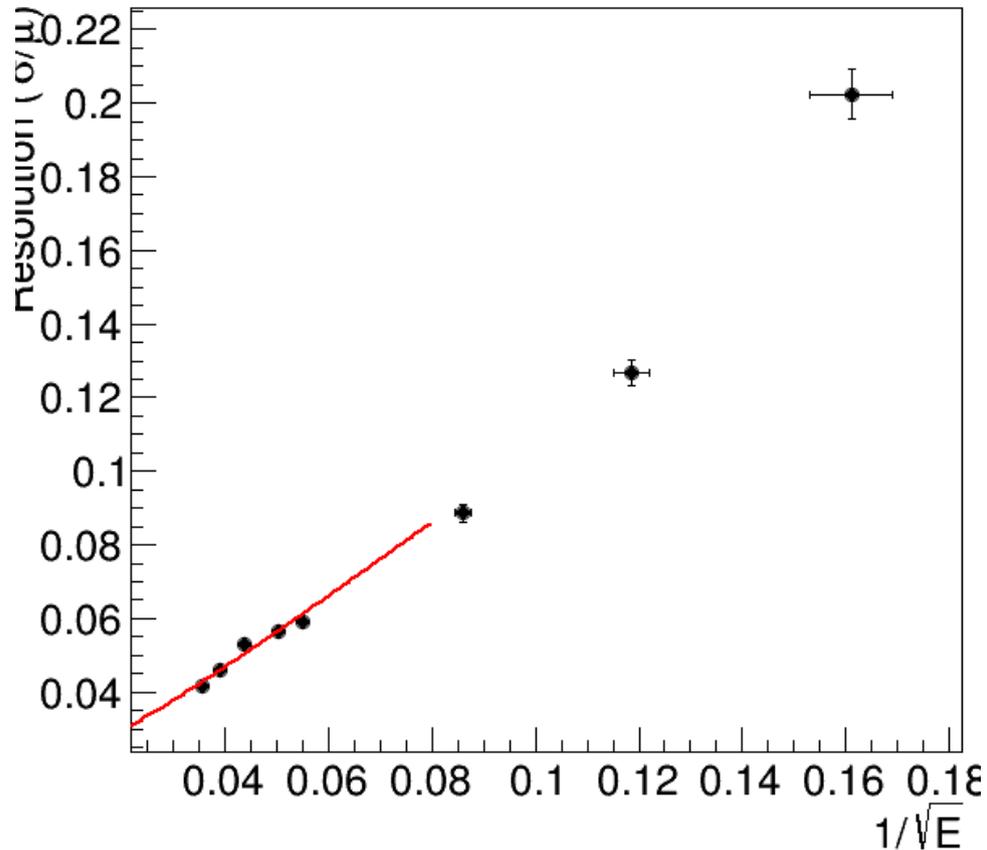
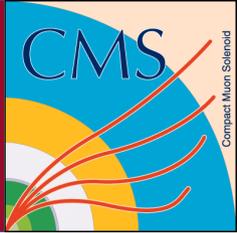
- Fit 2D histogram of Front vs Back HGCHE
- Calibrated Energy =  $(\text{HEBMIP}/\text{slope} + \text{HEFMIP}) / x\_intercept$



Calibrated Energy



# Calibrated Resolution



Stoch =  $1.041 \pm 0.057$

Const =  $0.0204 \pm 0.0007$

- Res = Stddev of (gen-rec)/gen
- Standalone has stoch = 0.7
- Differences I am going to check
  - Angle dependence
  - Start of shower in first layer