# sPHENIX EMCAL Meeting

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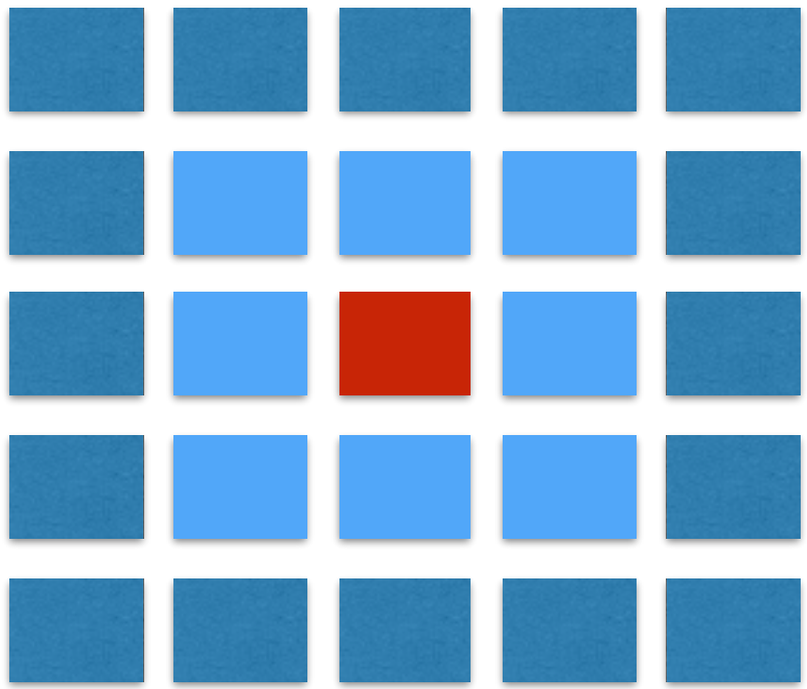
4-26-2016

# Energy resolution

<u>E 5by5:</u>
first find the maximum tower of energy, then add its neighbors.

<u>Etotal:</u>
take the total energy of all the towers

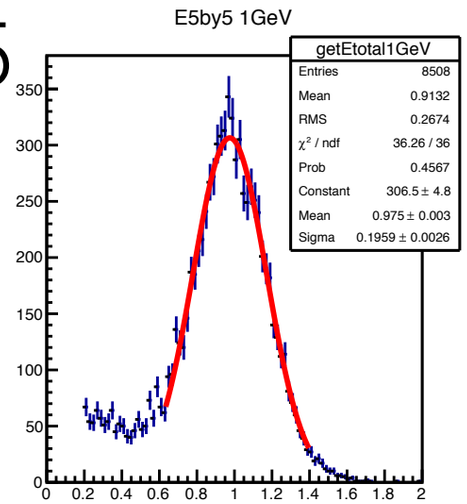


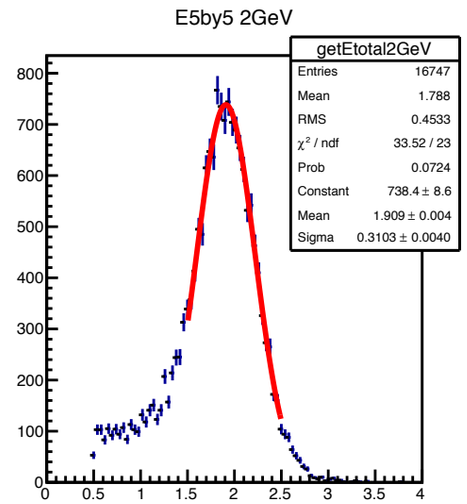
file directory:
/gpfs/mnt/gpfs02/sphenix/user/jinhuang/Prototype_2016/Production_0417_CEMC_MIP_set2_v3/

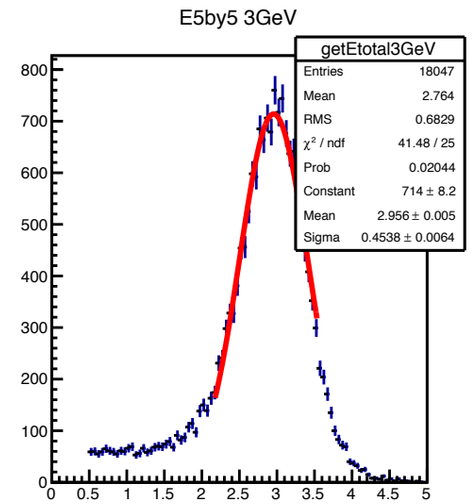
run numbers:
2298,2268,2260,2256,2247,2295,2276,2280

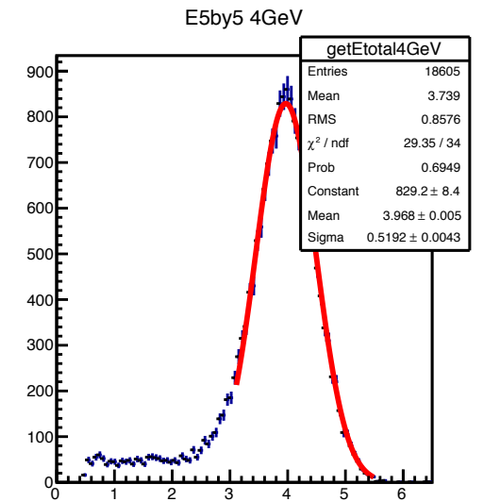
# 5x5 energy

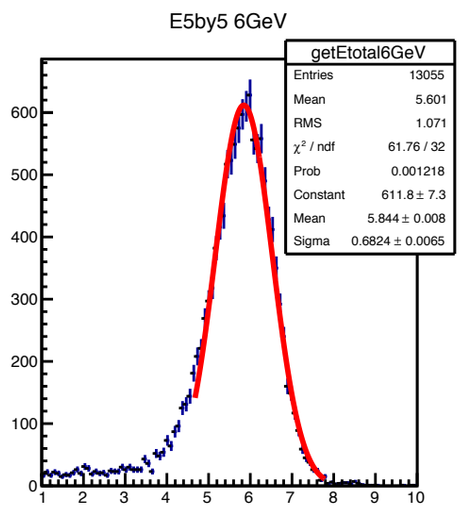
C1>5

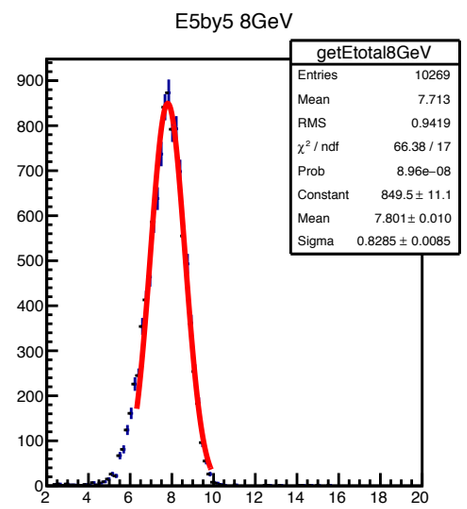


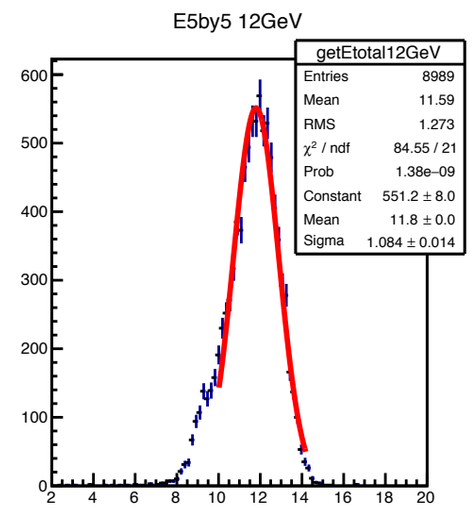



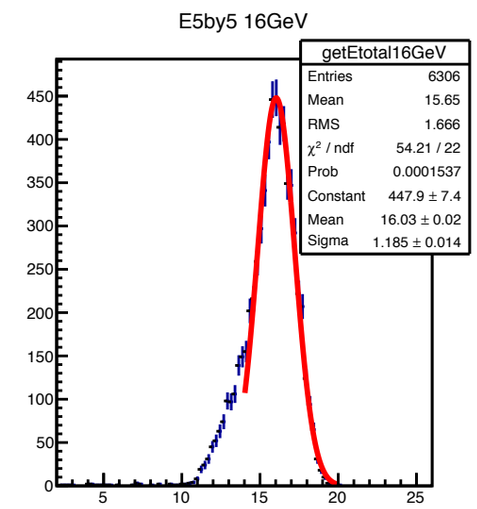



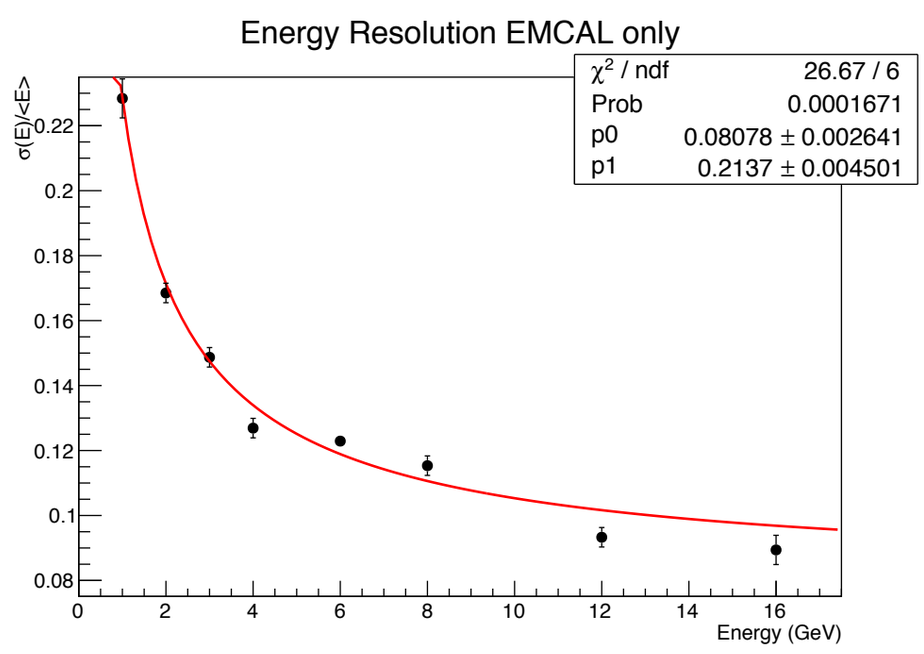



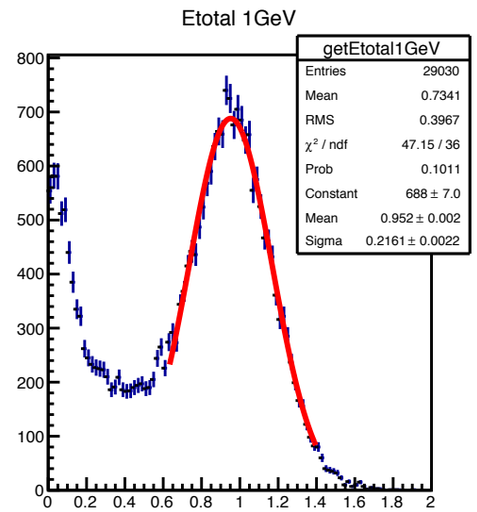



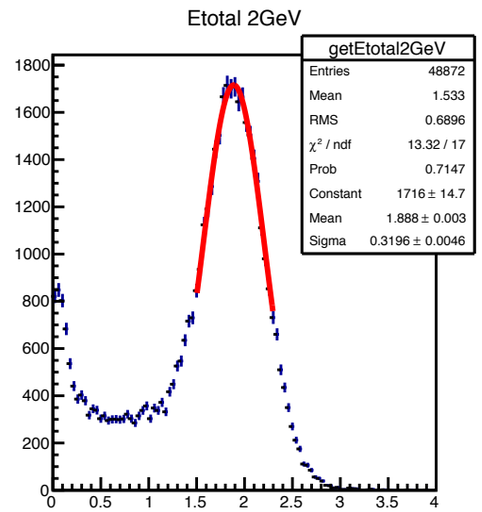

UIUC Tower 21

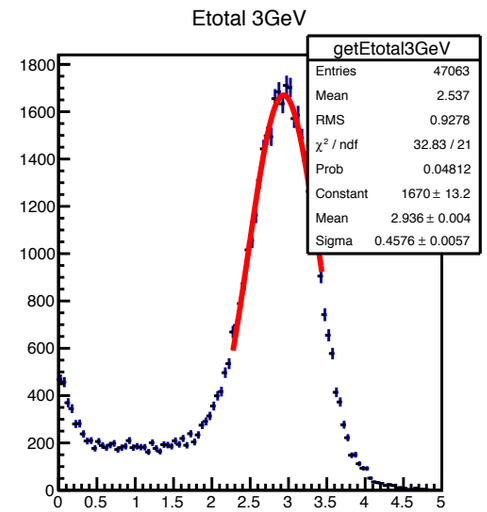


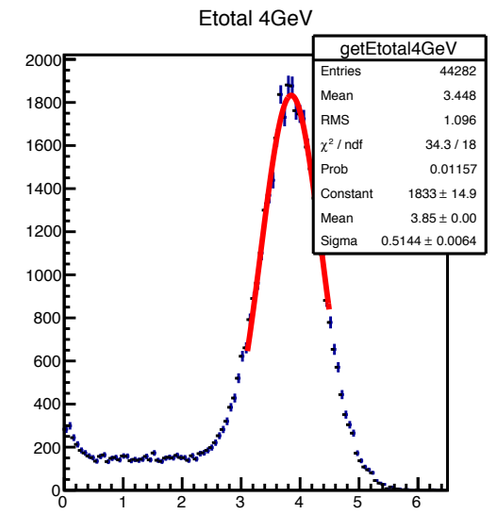
# Total energy

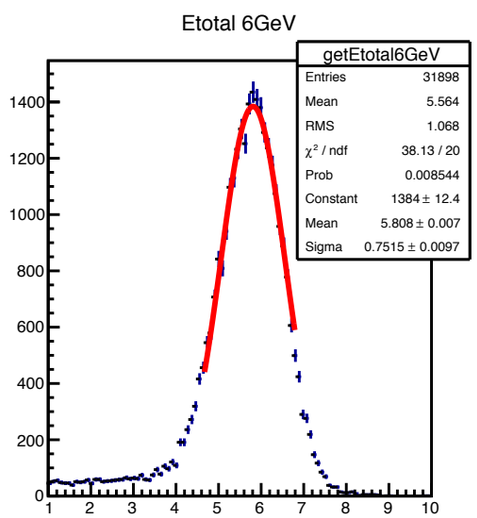
C1>5

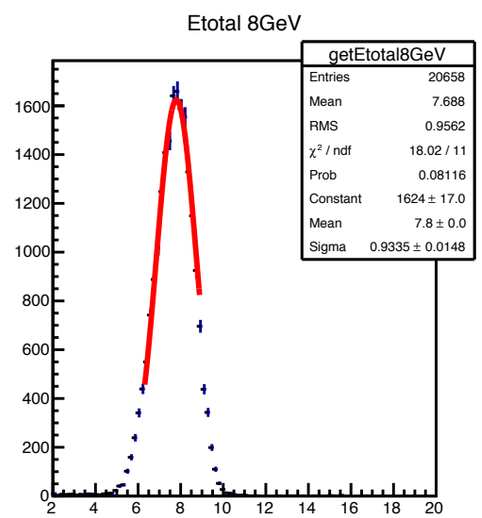


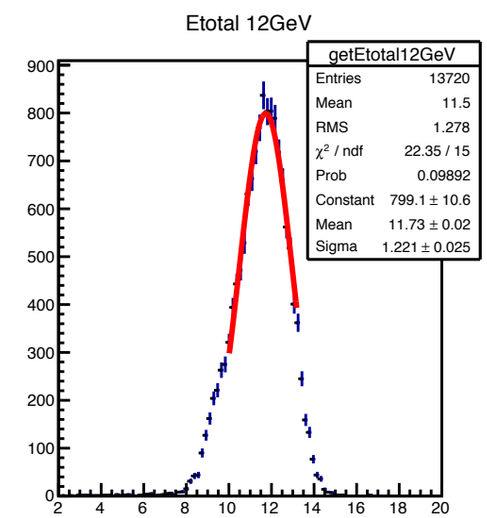



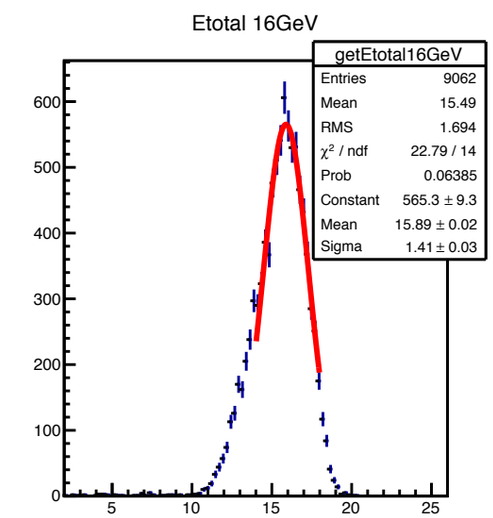



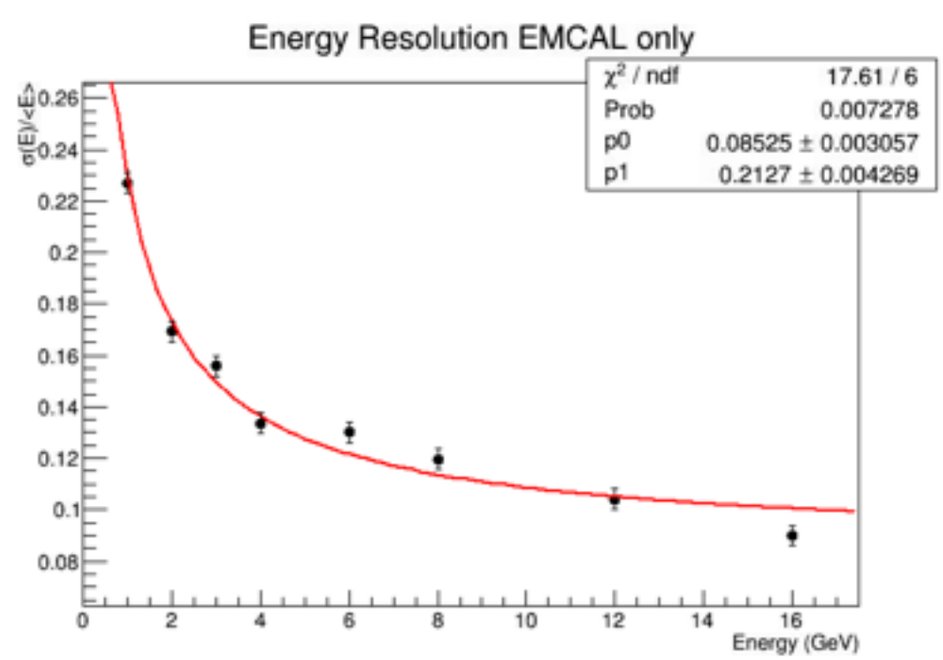



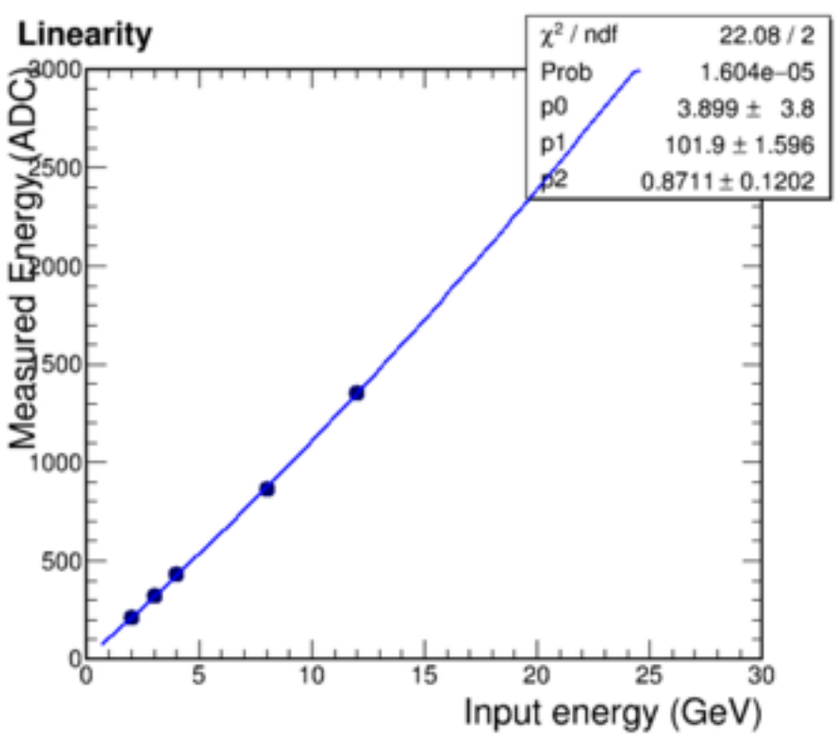

UIUC Tower 21

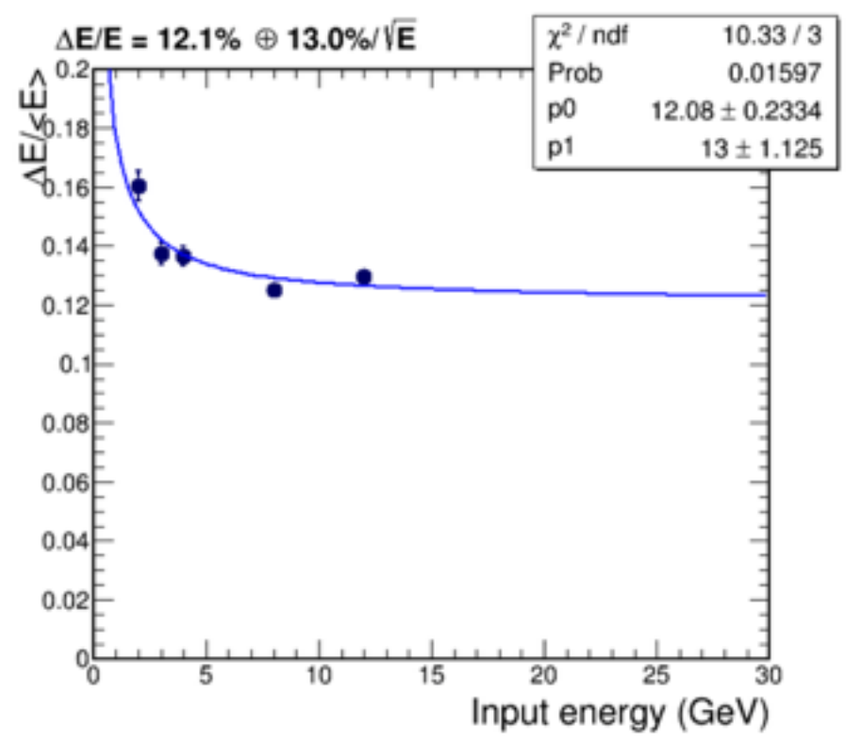


# Jin’s plot without tower to tower calibration

## details:

```
EMCAL 10° tilt on MT6.2C table for resolution measurement
2038   8   N   Low gain   Tower 21
2039   4   N   Low gain   Tower 21
2040   3   N   Low gain   Tower 21
2041   2   N   Low gain   Tower 21
2042   2   N   Low gain   Tower 21
2043   1   N   Low gain   Tower 21
2060   32  N   Low gain   Tower 21
2061   24  N   Low gain   Tower 21
2063   16  N   Low gain   Tower 21
2067   12  N   Low gain   Tower 21
```



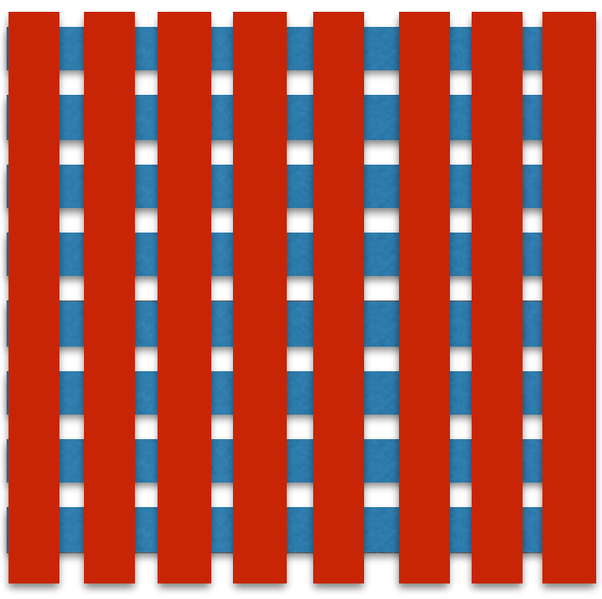



# Event Selection

done: cut on the Chrenkov variables C1 & C2

next:

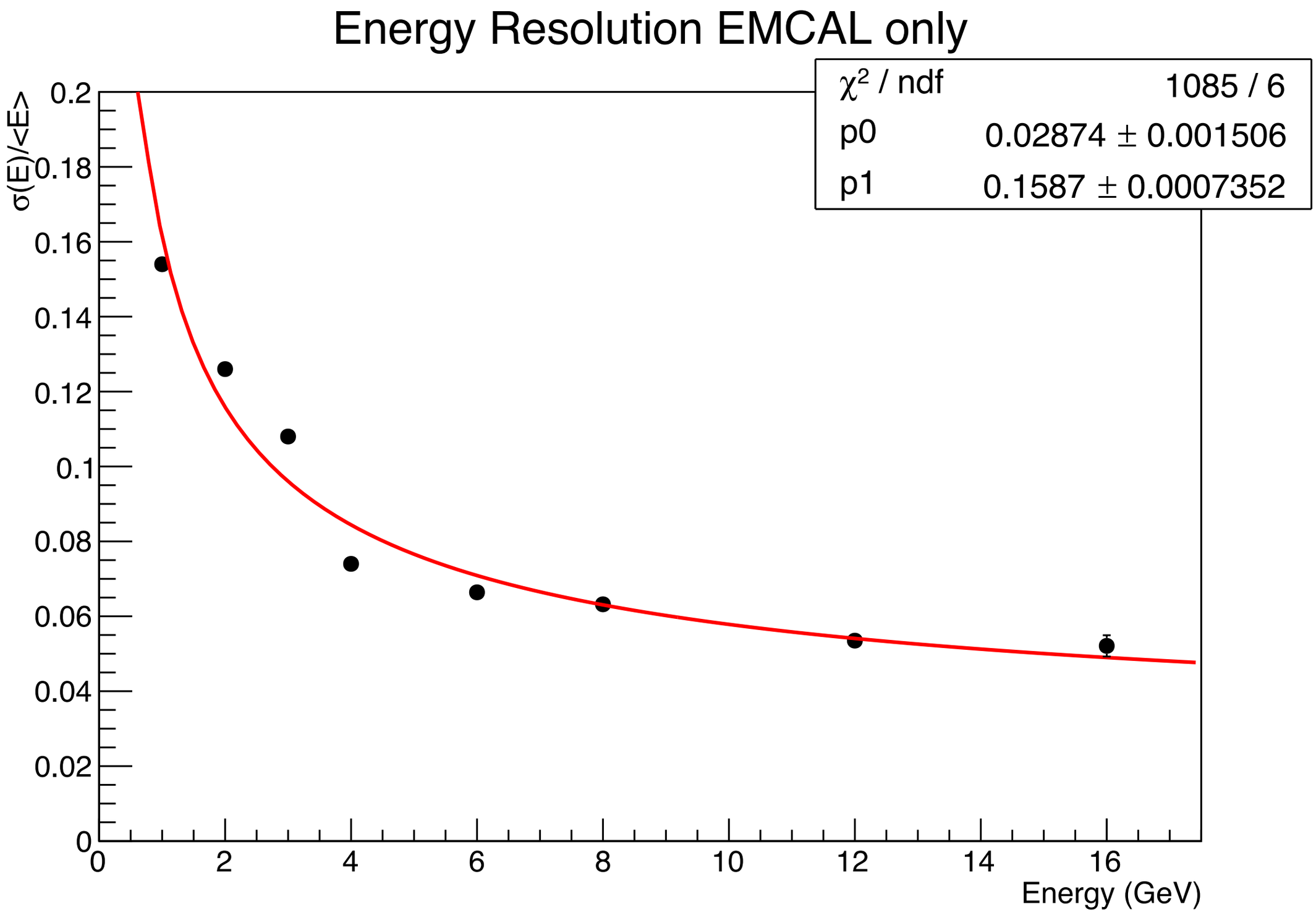
cut on the hodoscopes



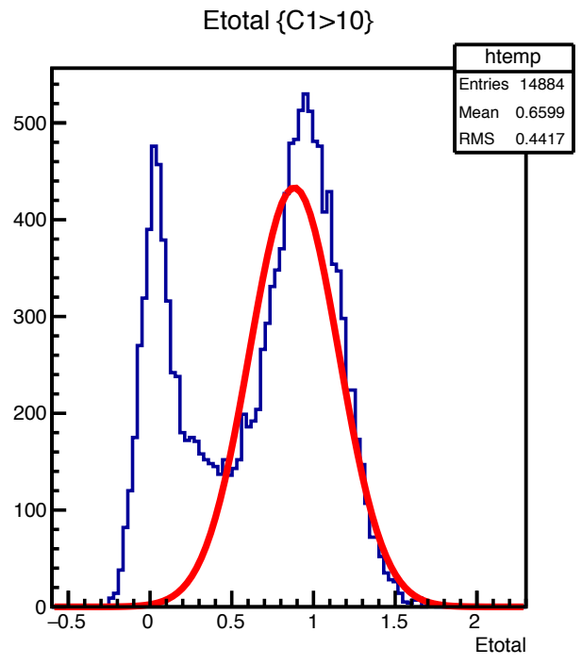
8 horizontal

8 vertical

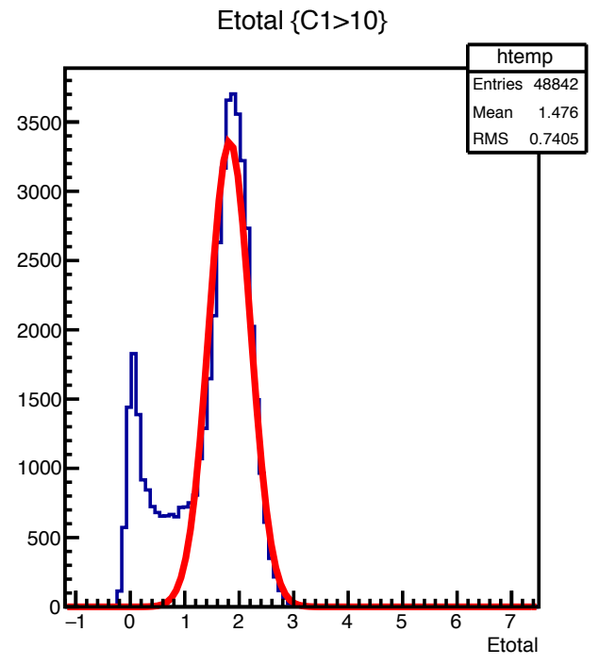
# Backup slides


Energy Resolution EMCAL only
χ² / ndf 1085 / 6
p0 0.02874 ± 0.001506
p1 0.1587 ± 0.0007352
σ(E)/<E>
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
2
4
6
8
10
12
14
16
Energy (GeV)

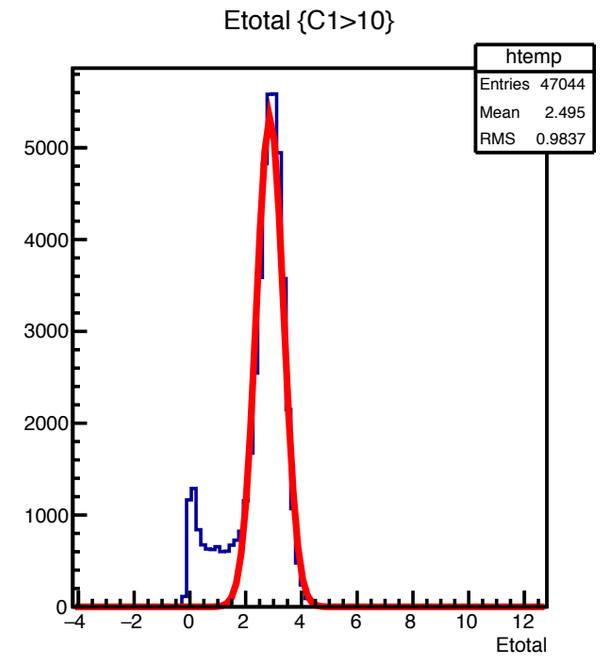
**1GeV**
**run 2298**



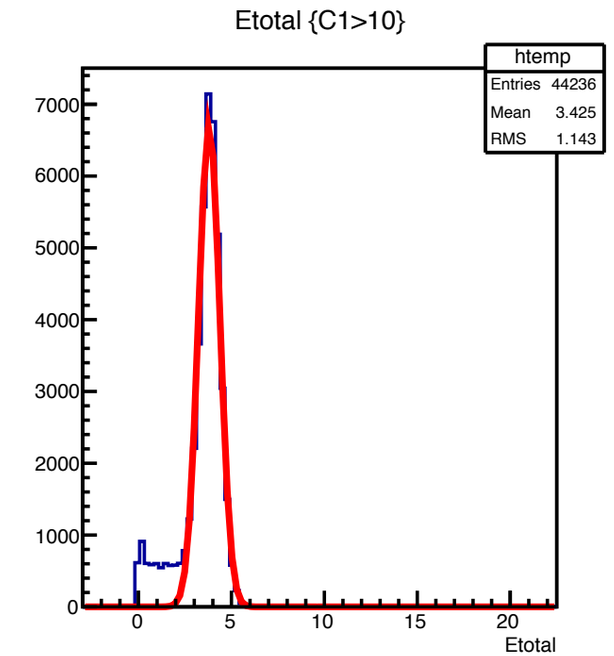

**2GeV**
**run 2268**

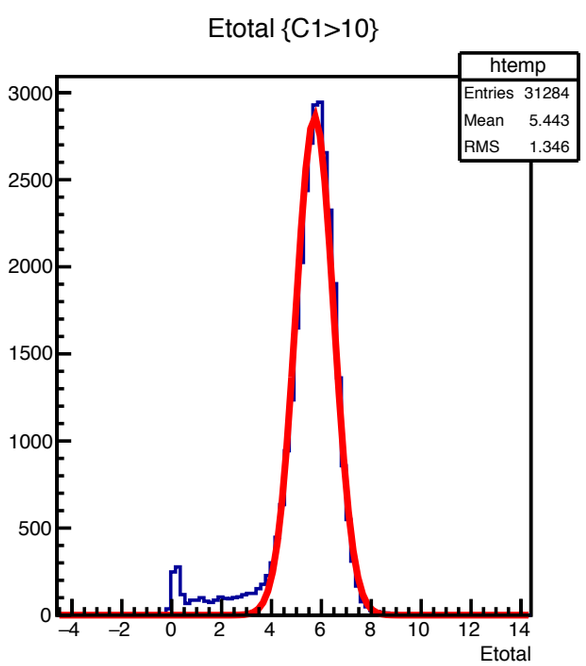



**3GeV**
**run 2260**

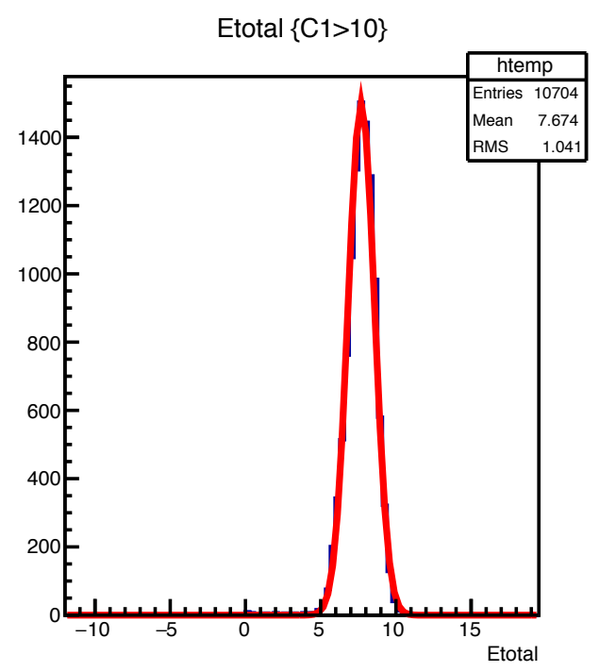



**4GeV**
**run 2256**

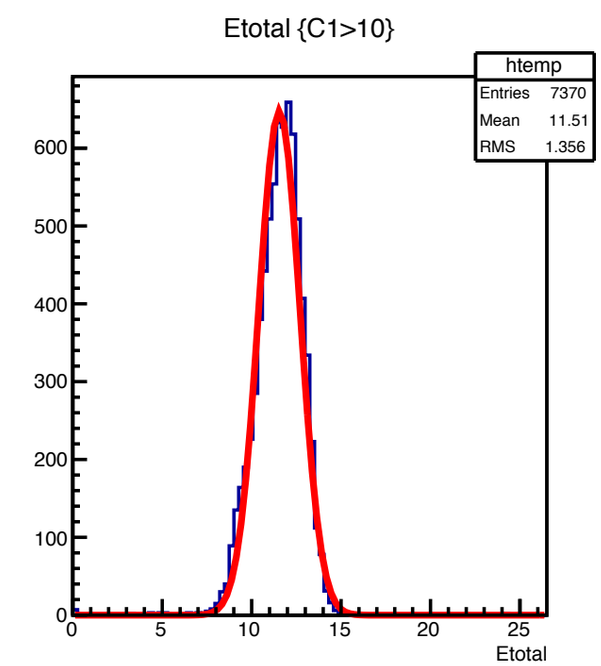


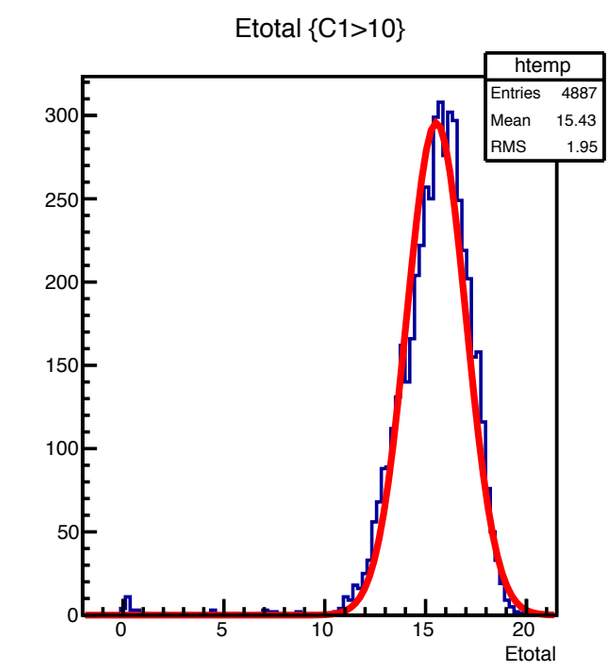

**6GeV**
**run 2247**




**8GeV**
**run 2295**




**12GeV**
**run 2276**




**16GeV**
**run 2280**