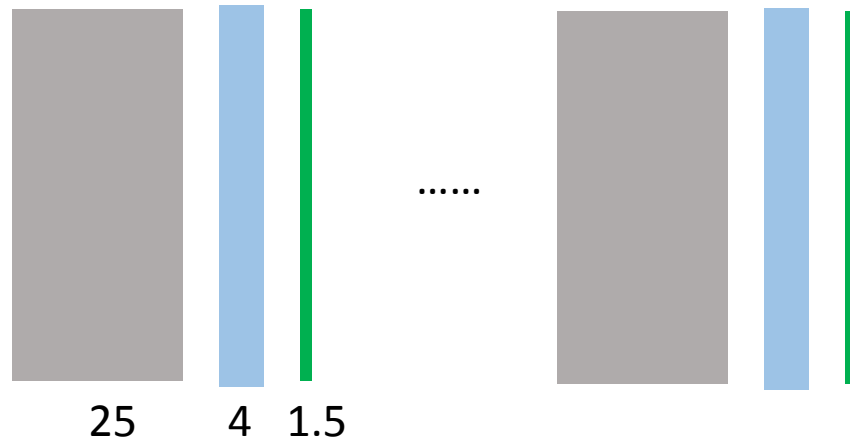


2016.07.05

S.Chen

探测器结构



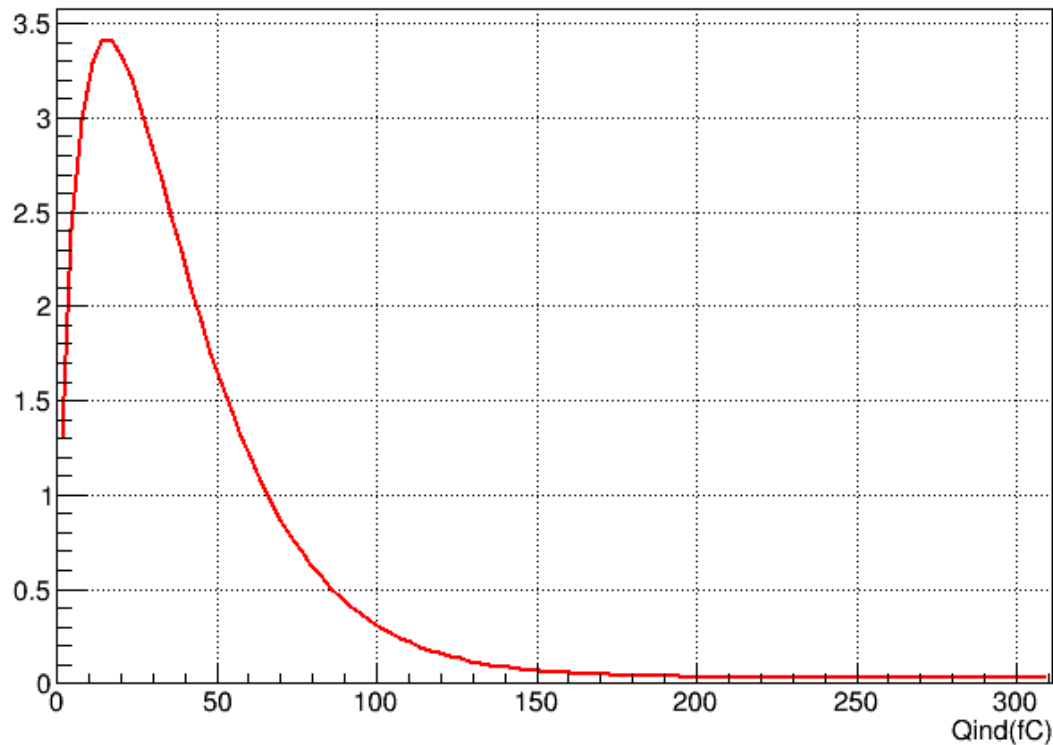
```
/Mokka/init/globalModelParameter SiCalLayerStructure (Iron:0,THGEM1:4,PCB:1.5)*200  
/Mokka/init/globalModelParameter SiCalZeroThickReset 25*200  
/Mokka/init/globalModelParameter SiCalInnerRadius 2080  
/Mokka/init/globalModelParameter SiCalBarrelHalfZ 2450
```

Distribution of charge

The Q spectrum of one MIP of induction can be estimated from the Polya PDF defined by:

$$P(Q_{ind}; a, b, c) = Q_{ind}^a e^{-bQ_{ind}} + c$$

PDF of MIP(MPGD)

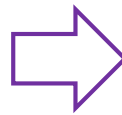
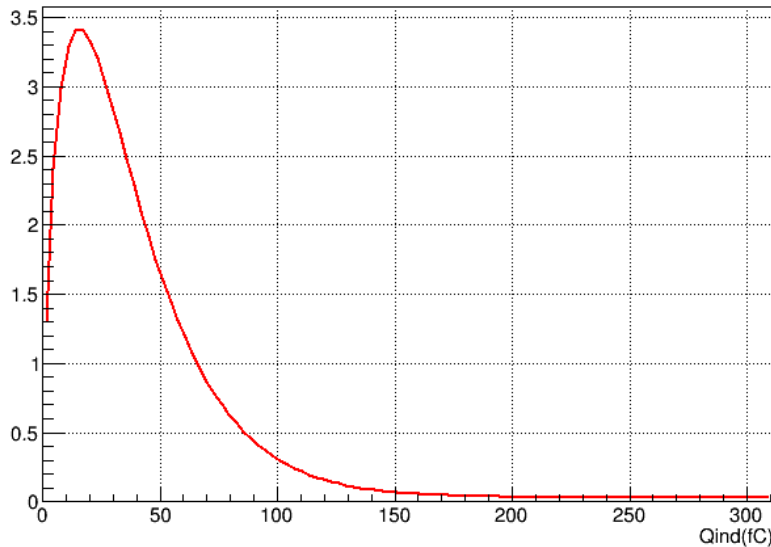


Distribution of charge

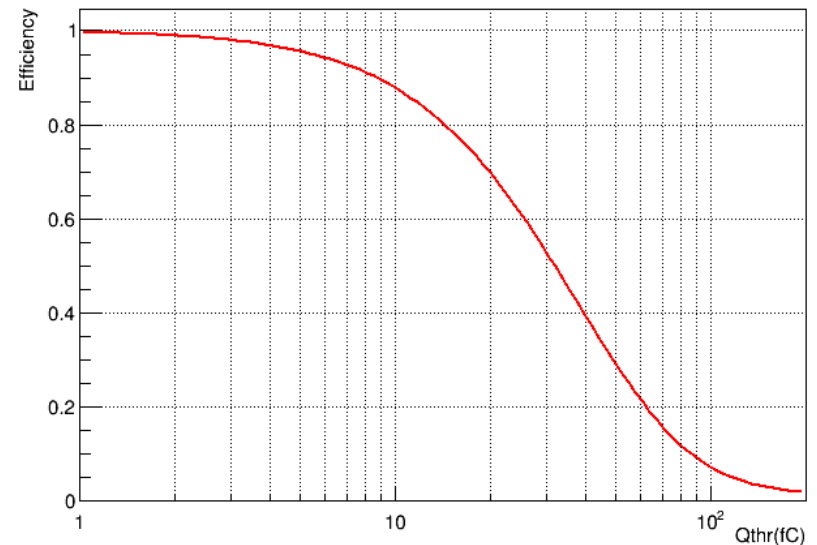
The efficiency as the function of threshold Q_{thr} can be expressed by:

$$\varepsilon(Q_{thr}) = 1 - c \int_0^{Q_{thr}} P(Q_{ind}; a, b, c) dQ_{ind}$$

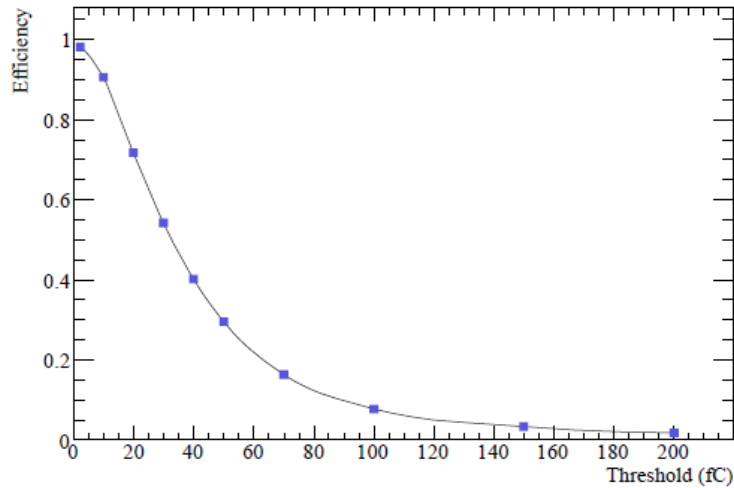
PDF of MIP(MPGD)



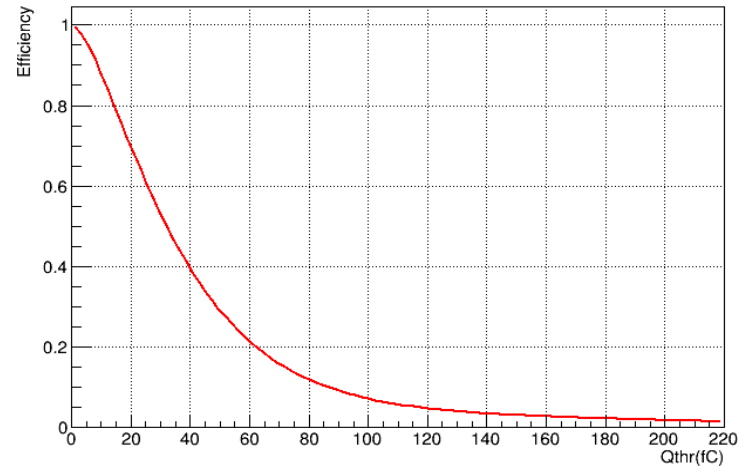
Efficiency vs threshold(MPGD)



Compare with data(Micromegas)



Efficiency vs threshold(MPGD)

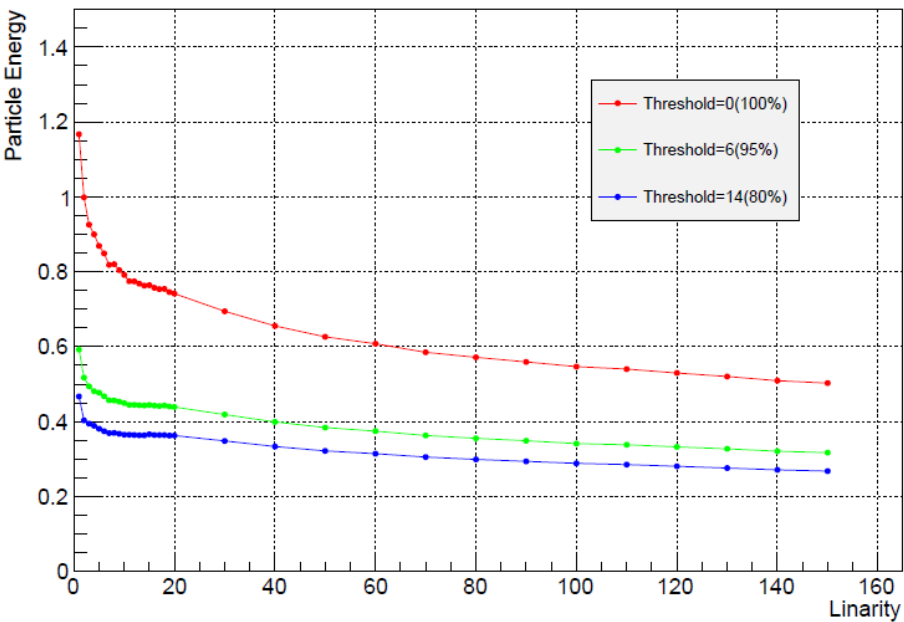


Data from C. A. et al., JINST P11023,2009

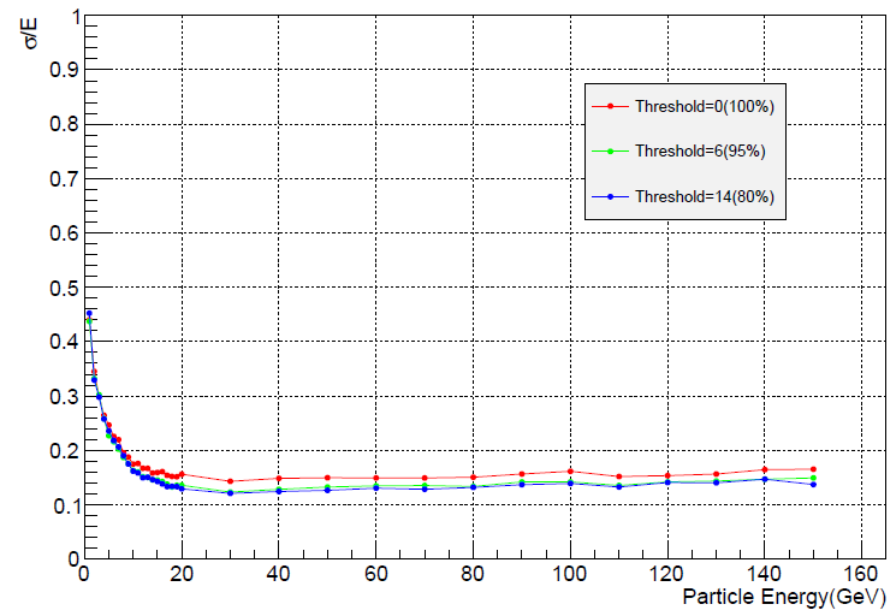
Thr=0 Eff=1
Thr=6 Eff=0.942885
Thr=14 Eff=0.806761
Thr=20 Eff=0.697302
Thr=26 Eff=0.593797
Thr=32 Eff=0.500665
Thr=40 Eff=0.394948
Thr=49 Eff=0.300408
Thr=62 Eff=0.202254
Thr=86 Eff=0.102029

Threshold Scan

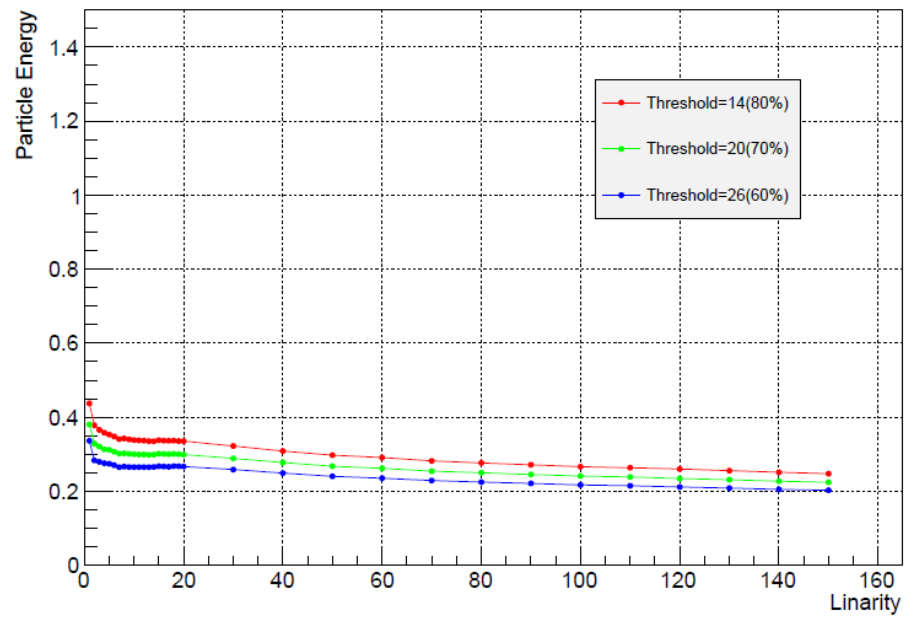
pi+ Lilarity



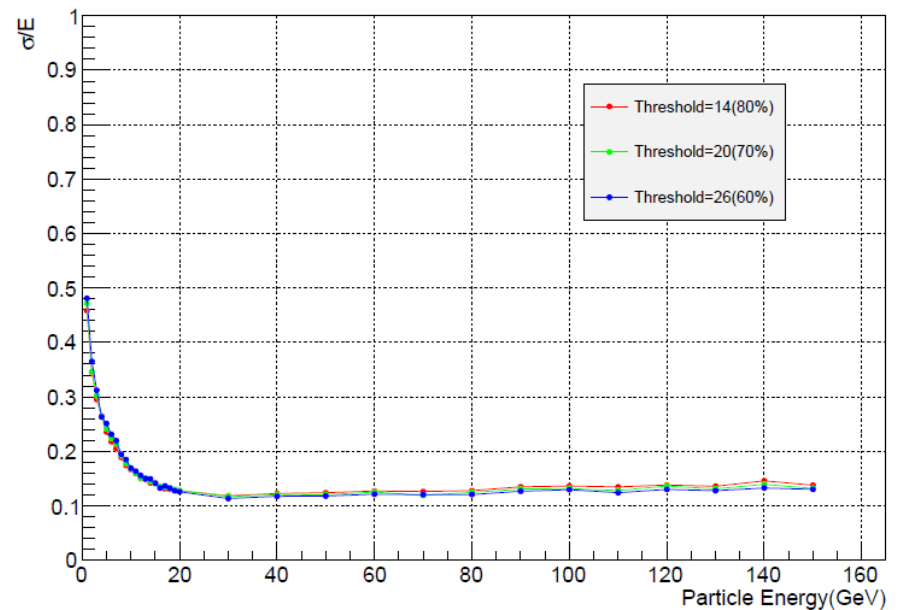
pi+ Resolution



pi+ Lilarity

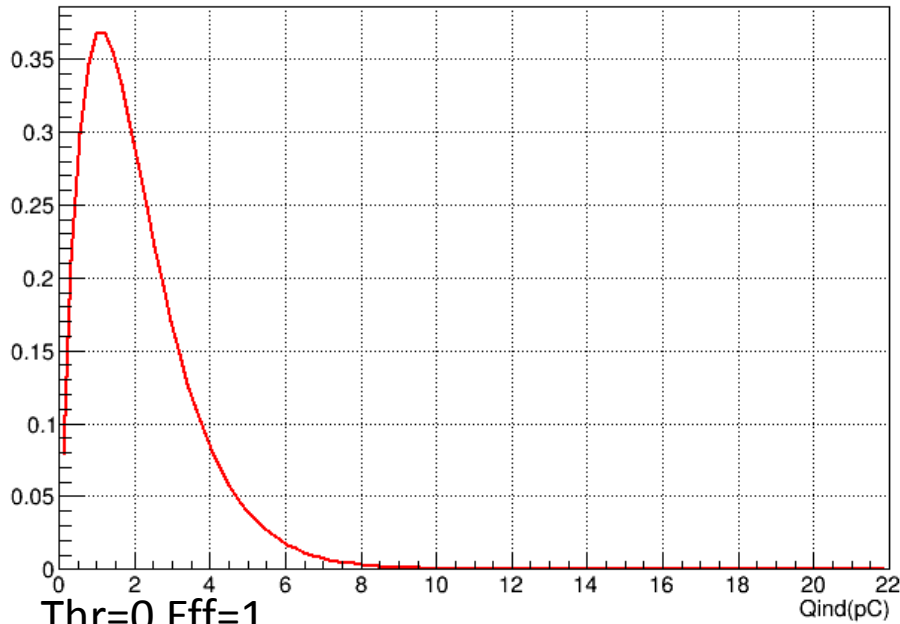


pi+ Resolution



Charge of GRPC

PDF of MIP(MPGD)



Thr=0 Eff=1

Thr=0.4 Eff=0.949116

Thr=0.6 Eff=0.895306

Thr=0.9 Eff=0.797268

Thr=1.15 Eff=0.709433

Thr=1.45 Eff=0.605413

Thr=1.75 Eff=0.508472

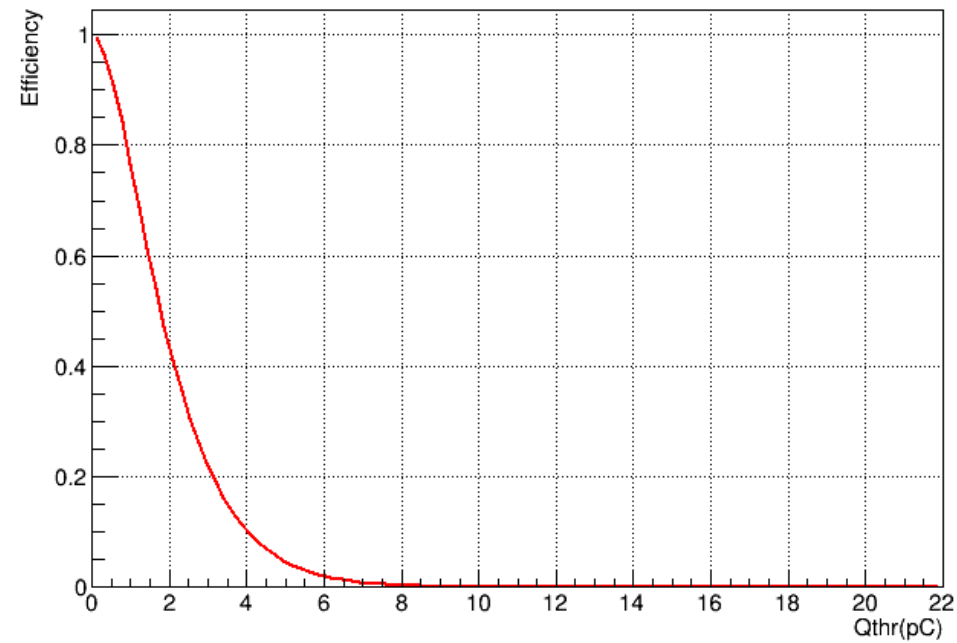
Thr=2.15 Eff=0.395181

Thr=2.55 Eff=0.301824

Thr=3.1 Eff=0.203843

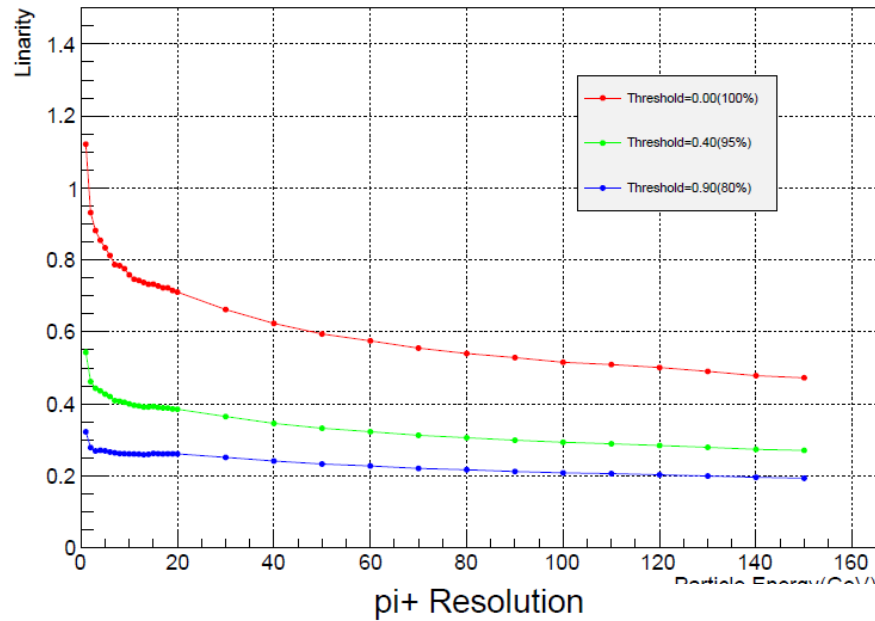
Thr=4 Eff=0.102998

Efficiency vs threshold(MPGD)

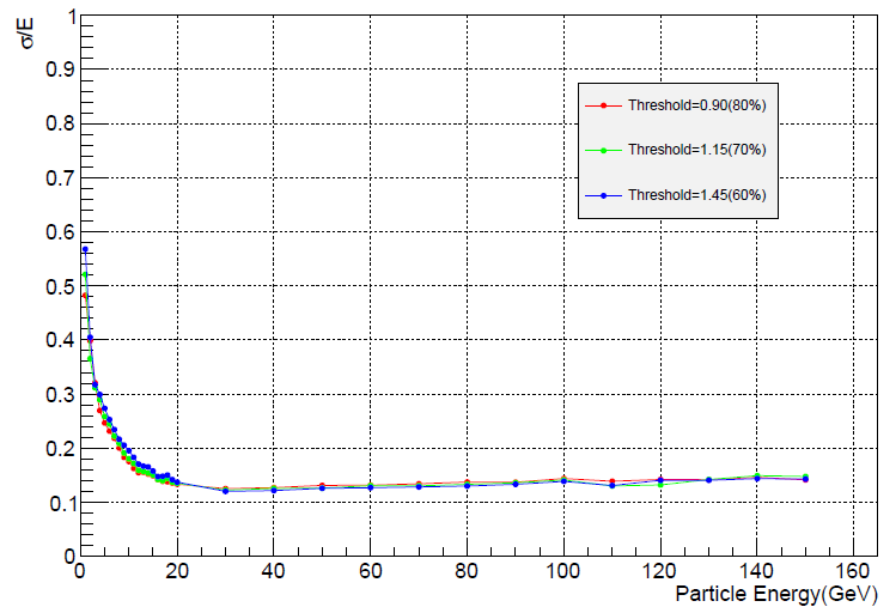
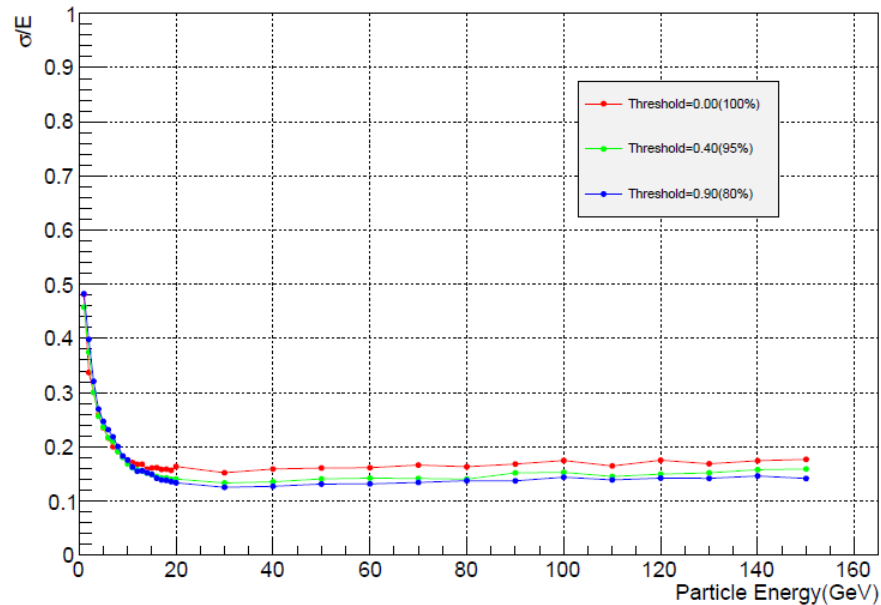
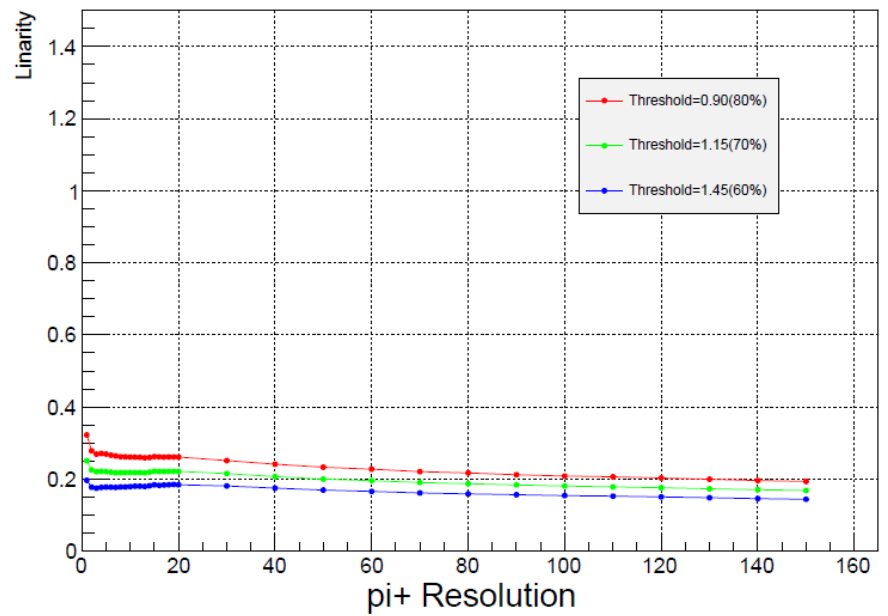


Threshold Scan

pi+ Lilarity

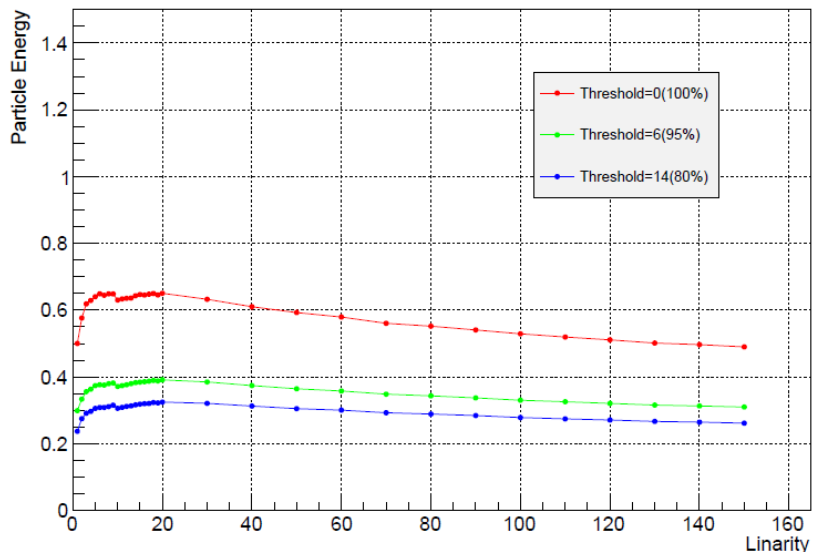


pi+ Lilarity

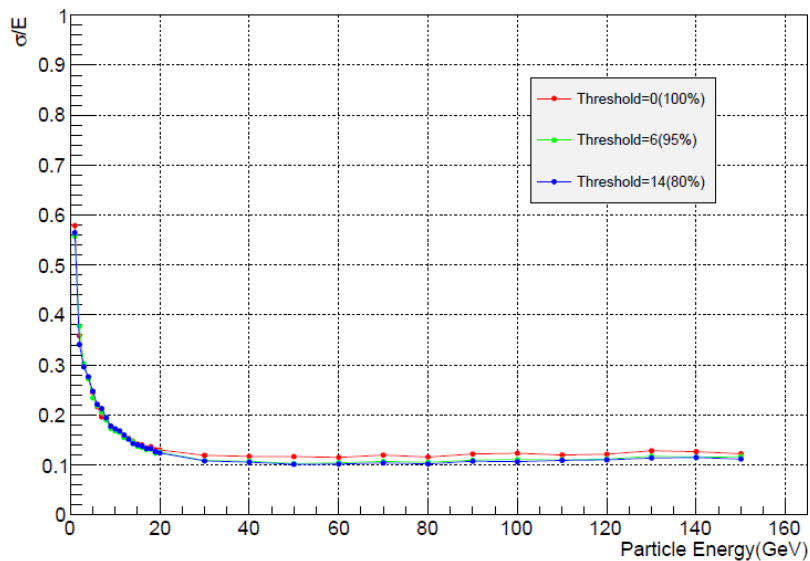


Neutron(THGEM)

neutron Linearity

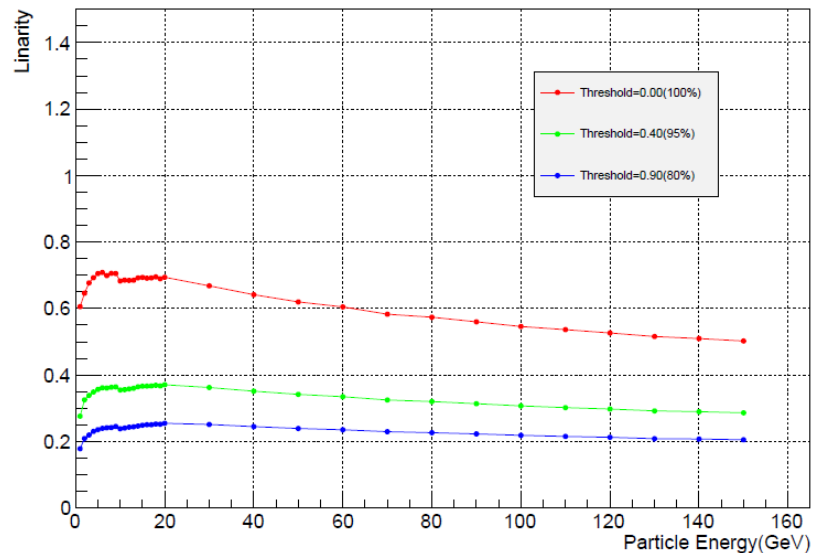


neutron Resolution

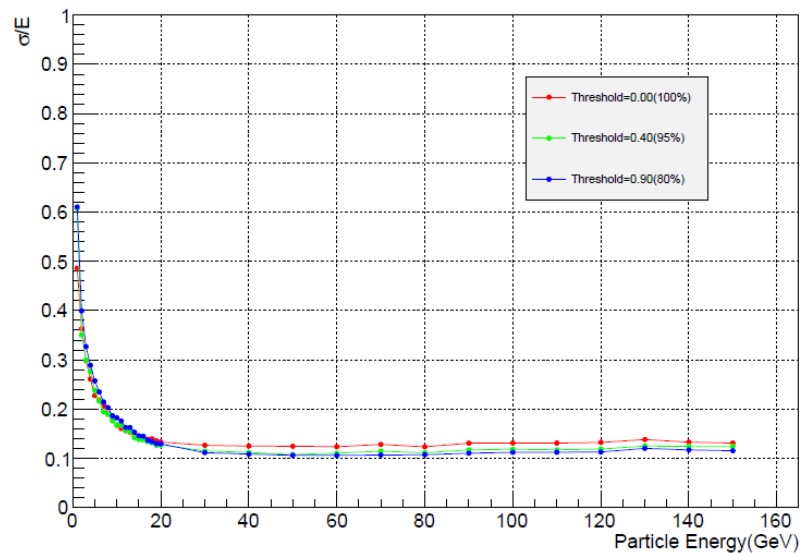


Neutron(RPC)

neutron Linearity

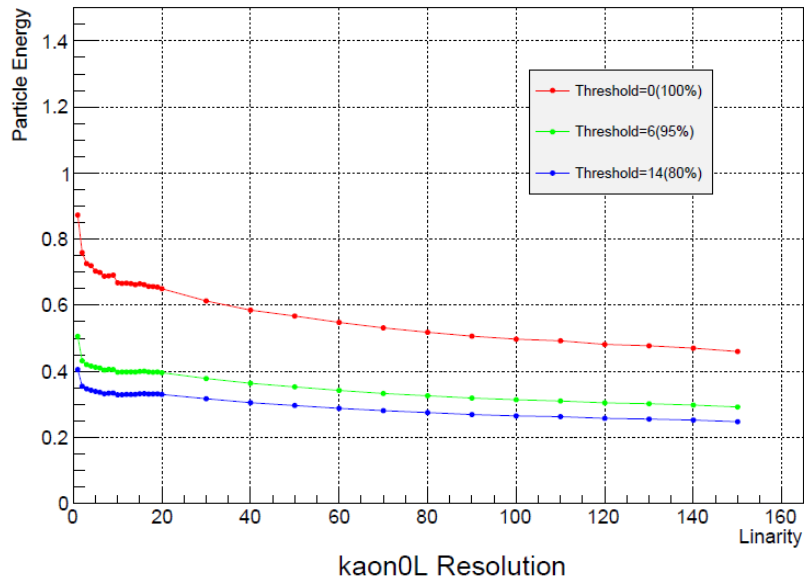


neutron Resolution

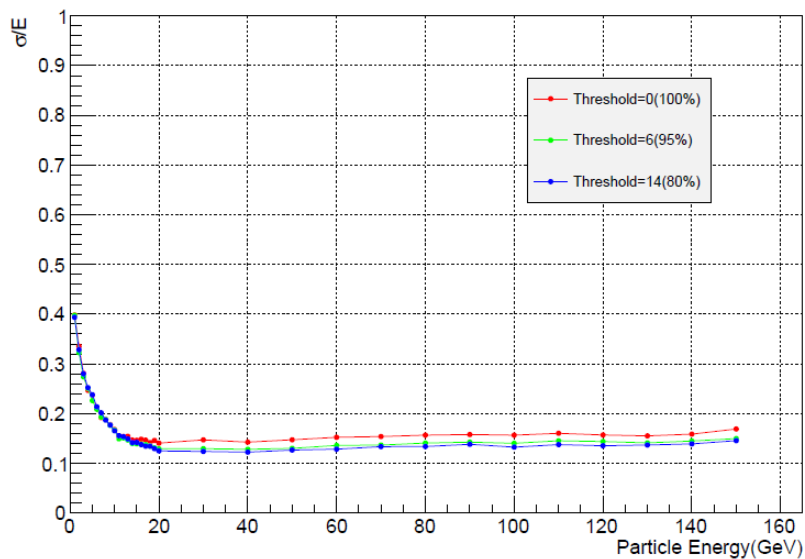


K_{0L} (THGEM)

kaon0L Linary

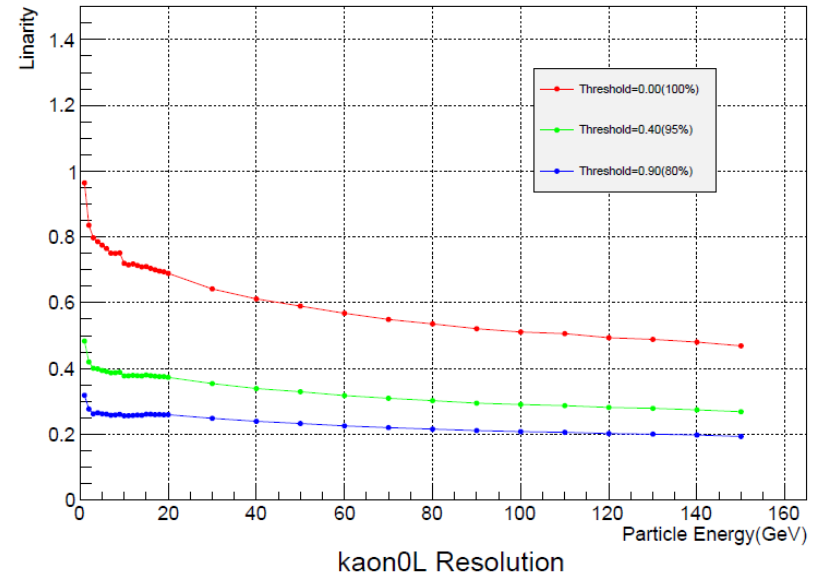


kaon0L Resolution

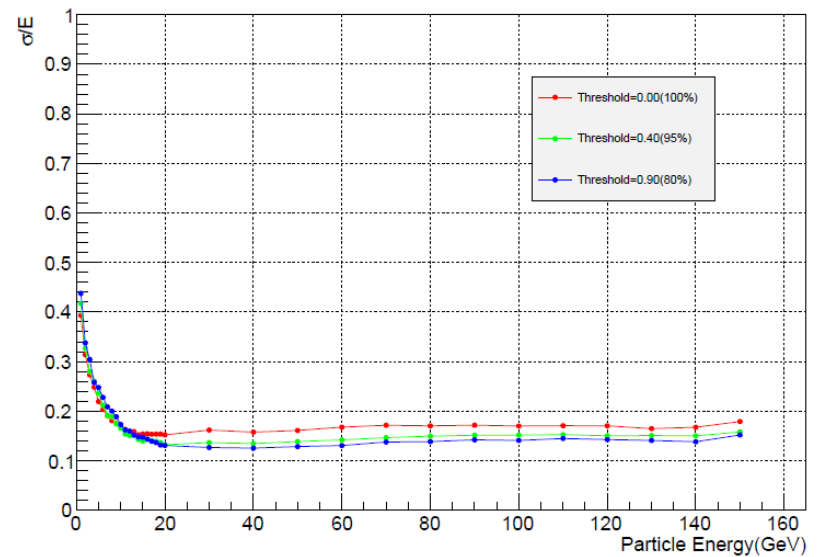


K_{0L} (RPC)

kaon0L Linary

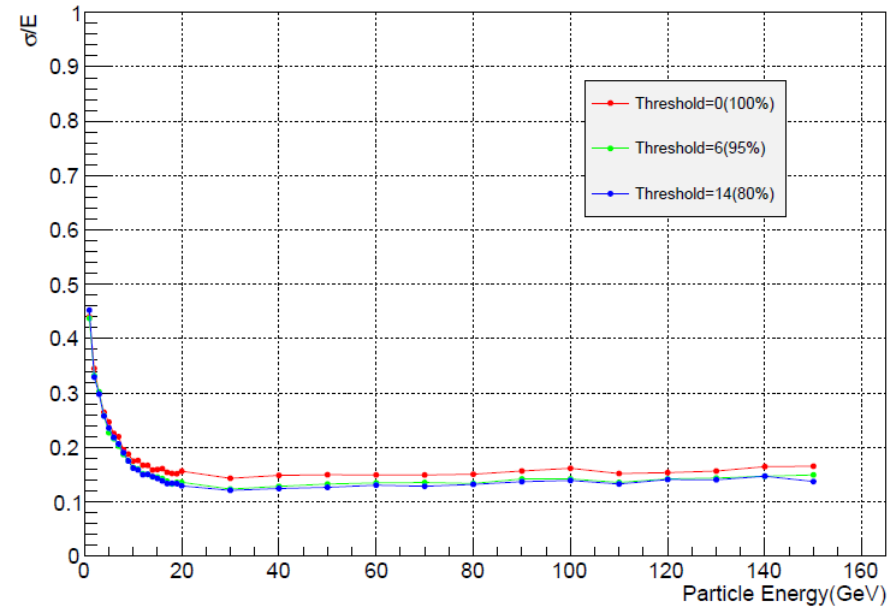


kaon0L Resolution

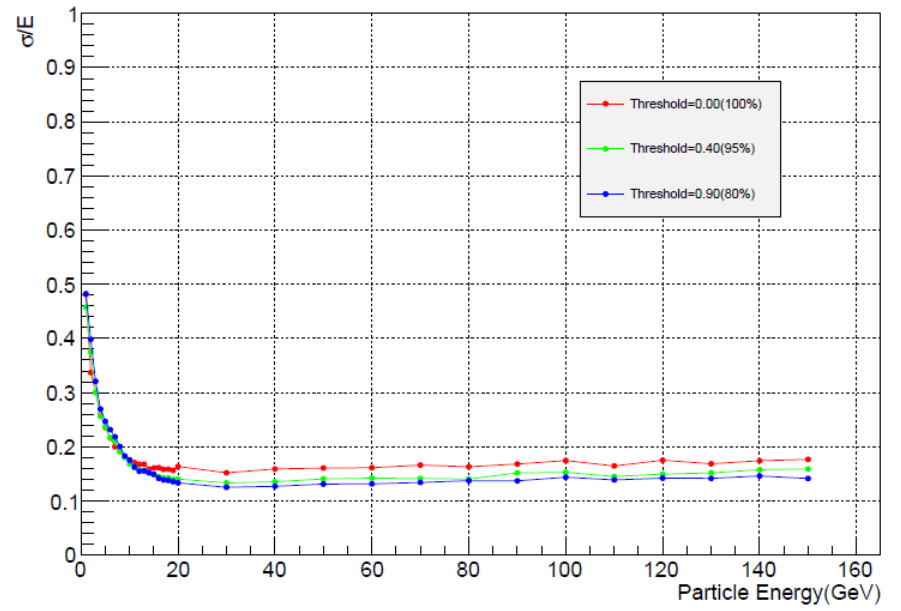


Compare R

pi+ Resolution

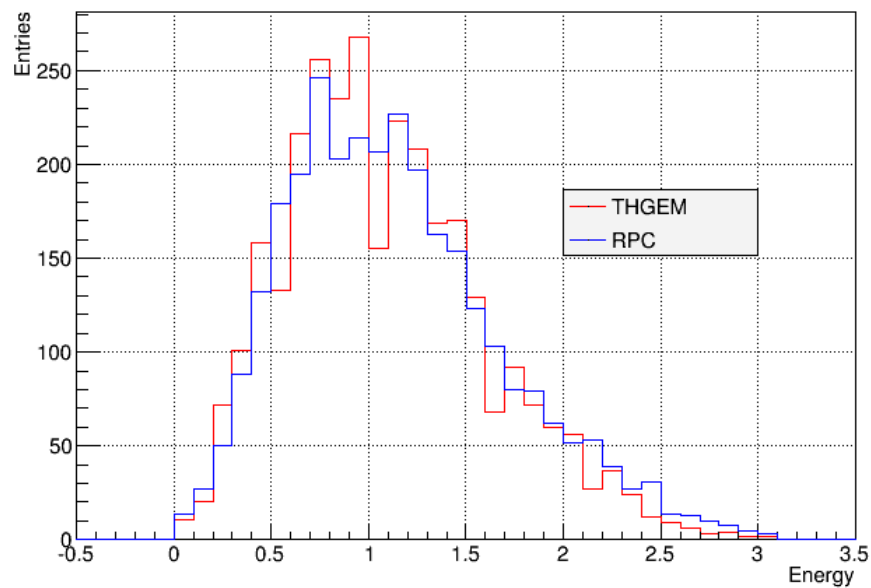


pi+ Resolution

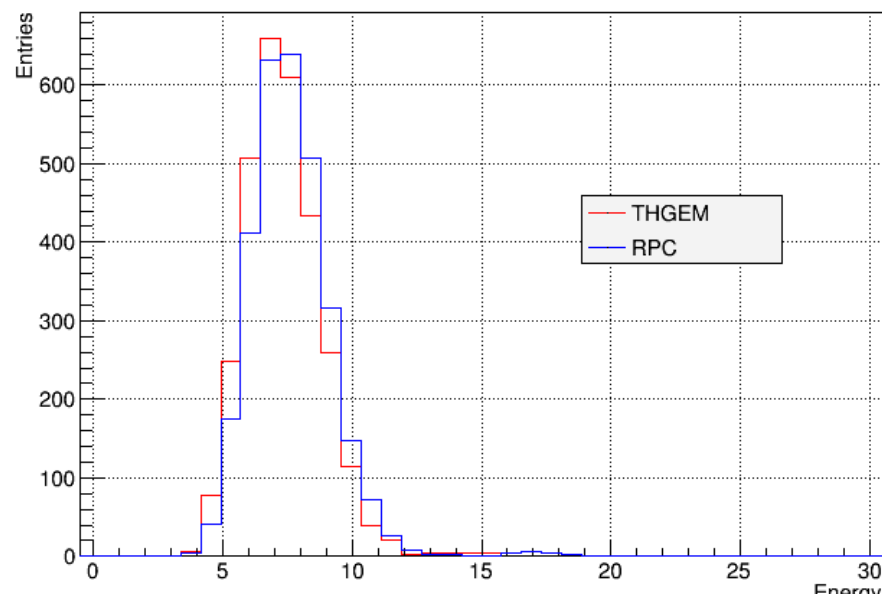


Compare E

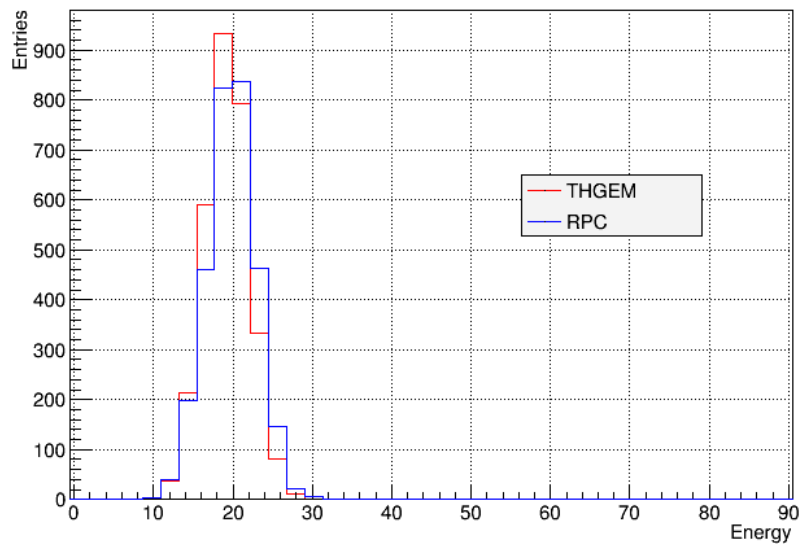
pi+ 1GeV



pi+ 10GeV



pi+ 30GeV



pi+ 100GeV

