

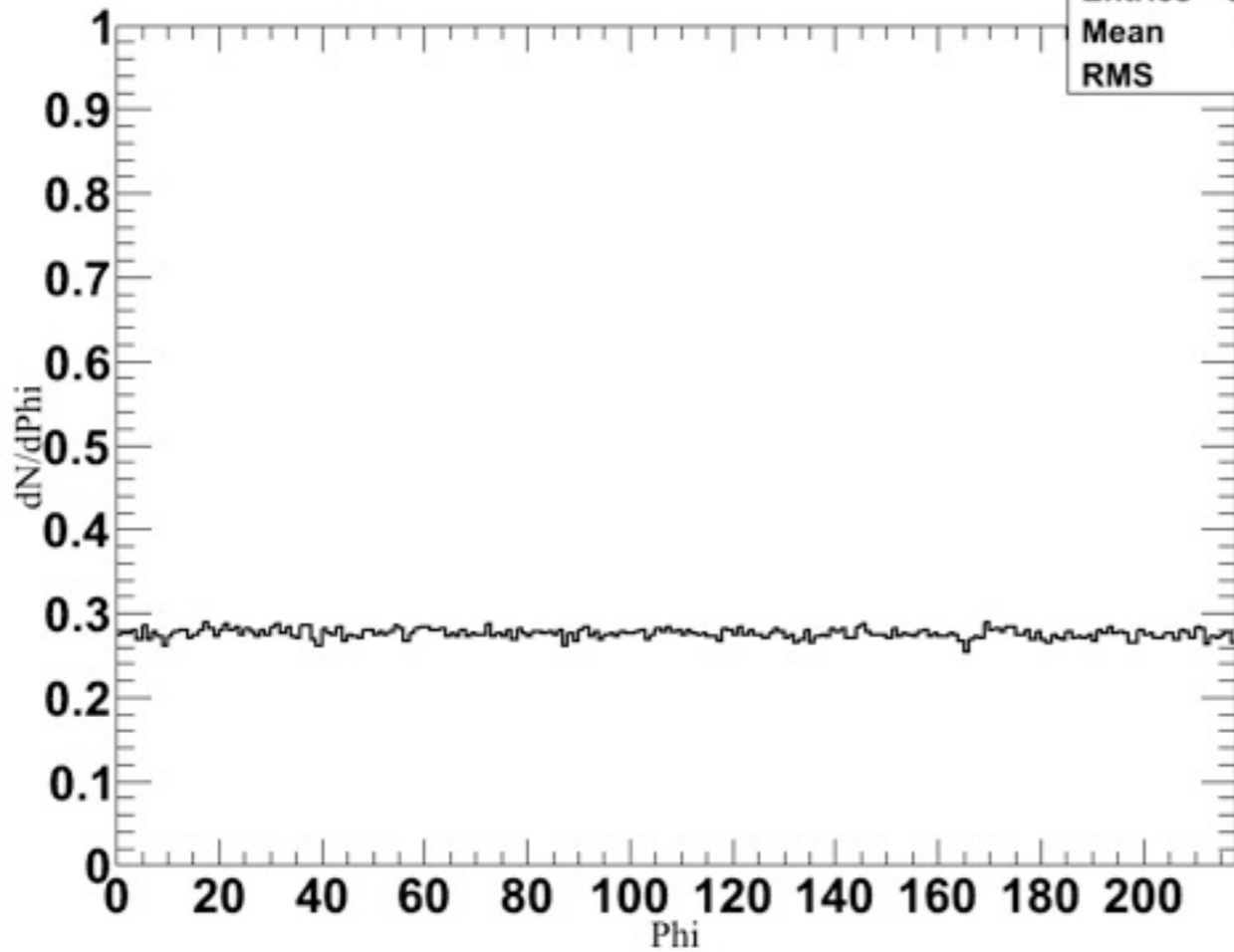
Simulation of Detector surrounding TPC

2013.03.11.Tue.
Go Yeonju

dN/dPhi

per event

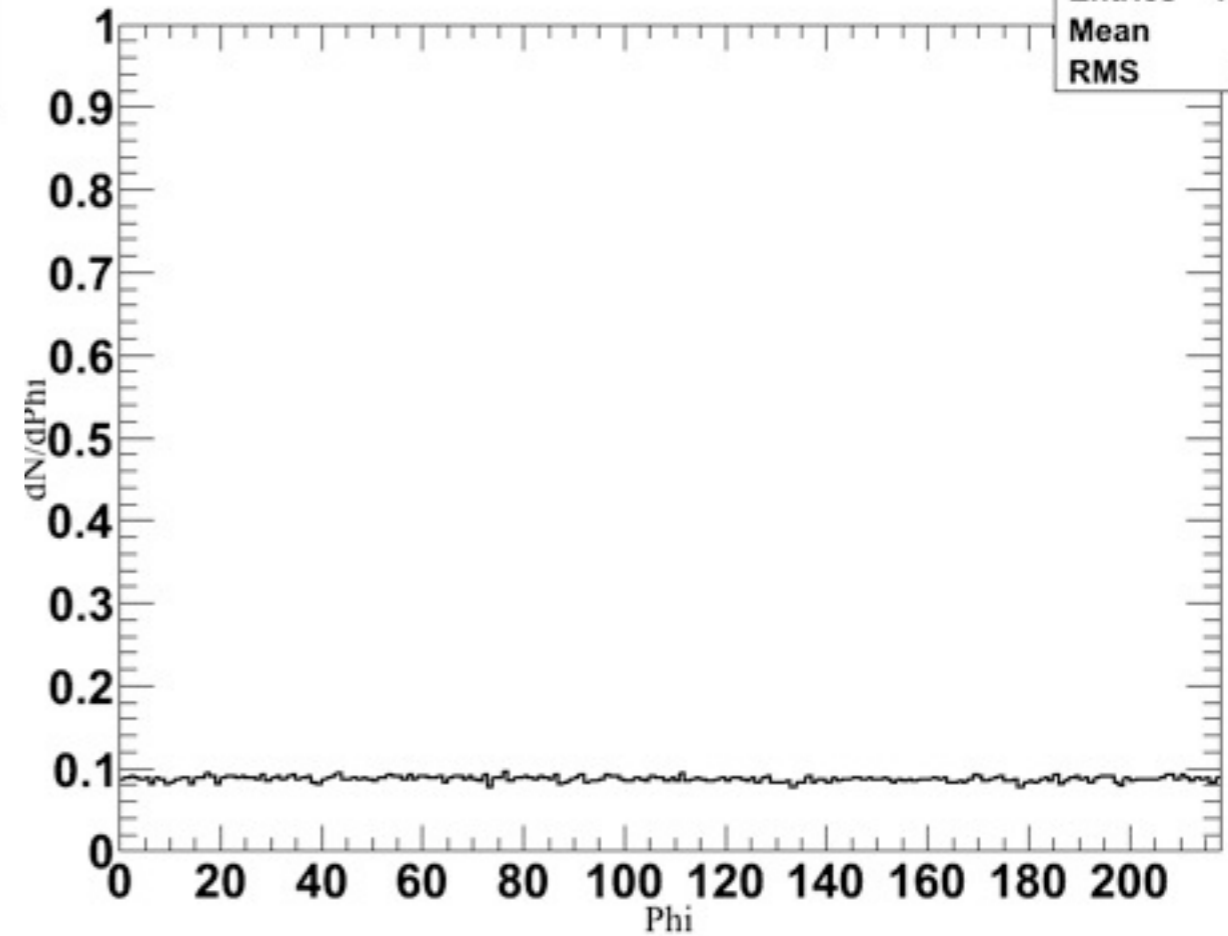
dN/dPhi vs dPhi (charged)



dN/dPhi vs dPhi (charged)

Entries	600451
Mean	108.3
RMS	62.91

dN/dPhi vs dPhi (neutron)

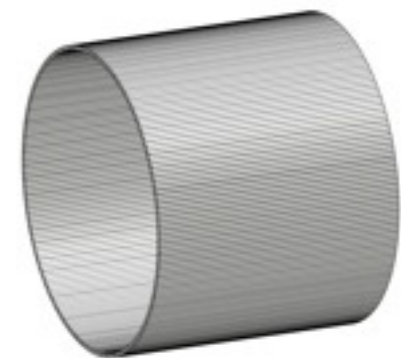


Entries	188919
Mean	108.1
RMS	62.99

charged particles

: except for muons and electrons

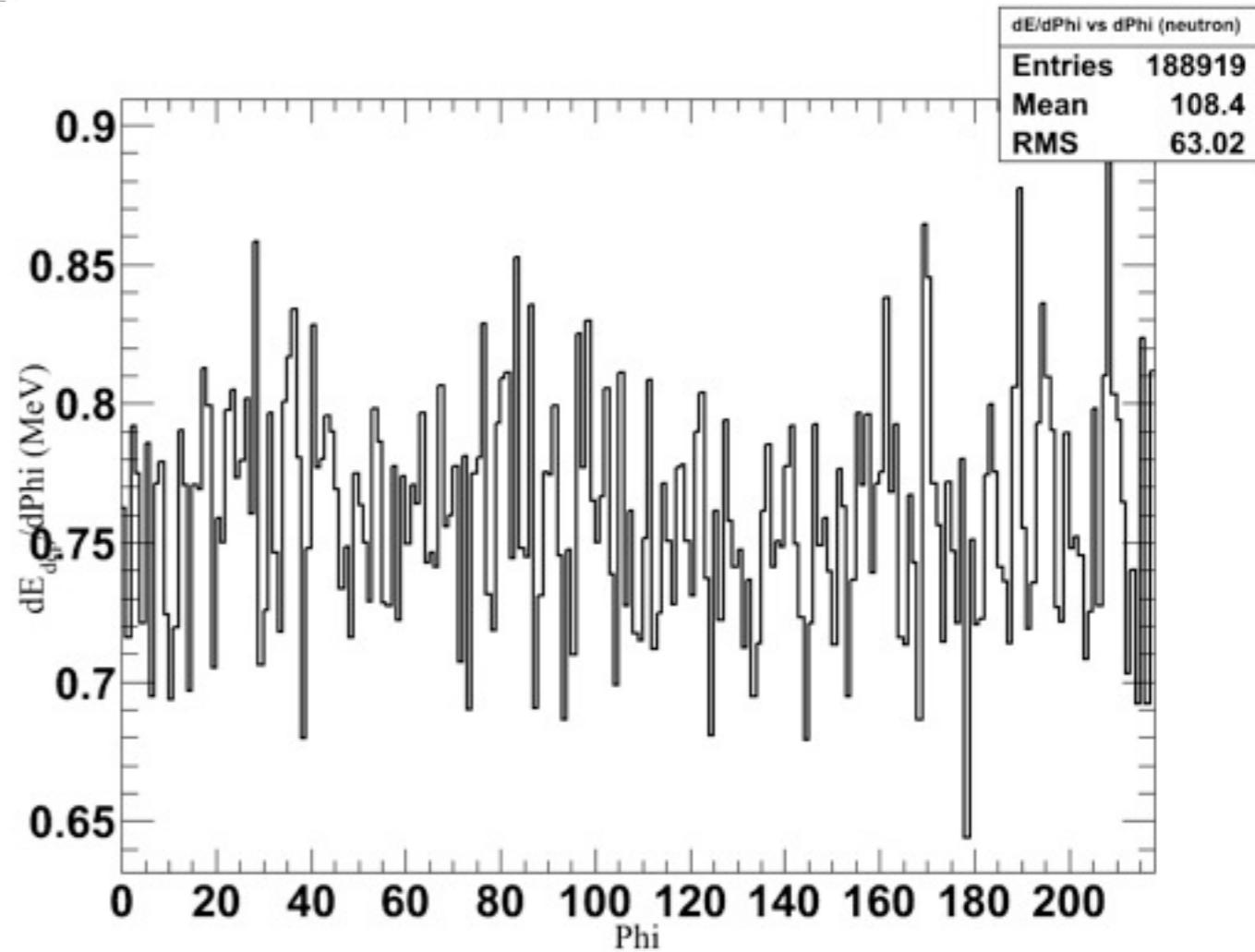
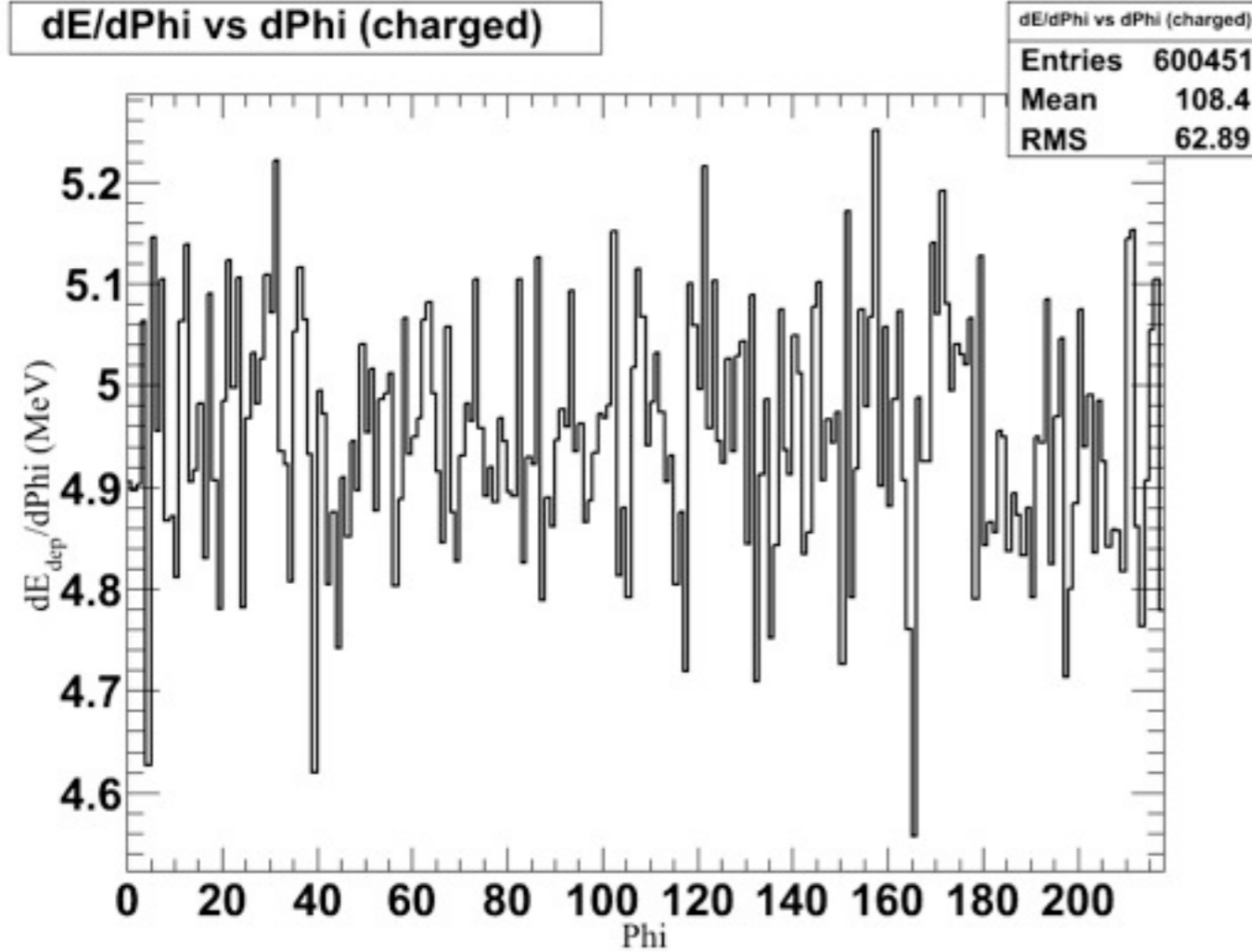
neutrons



Energy cut : 1 MeV | bin = 1 module

dE/dPhi

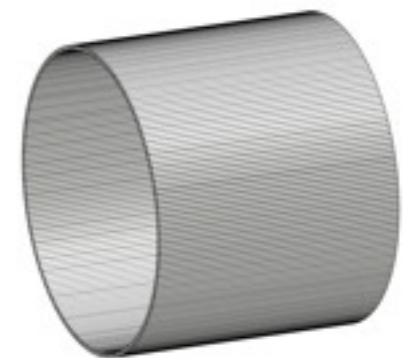
per event



charged particles

: except for muons and electrons

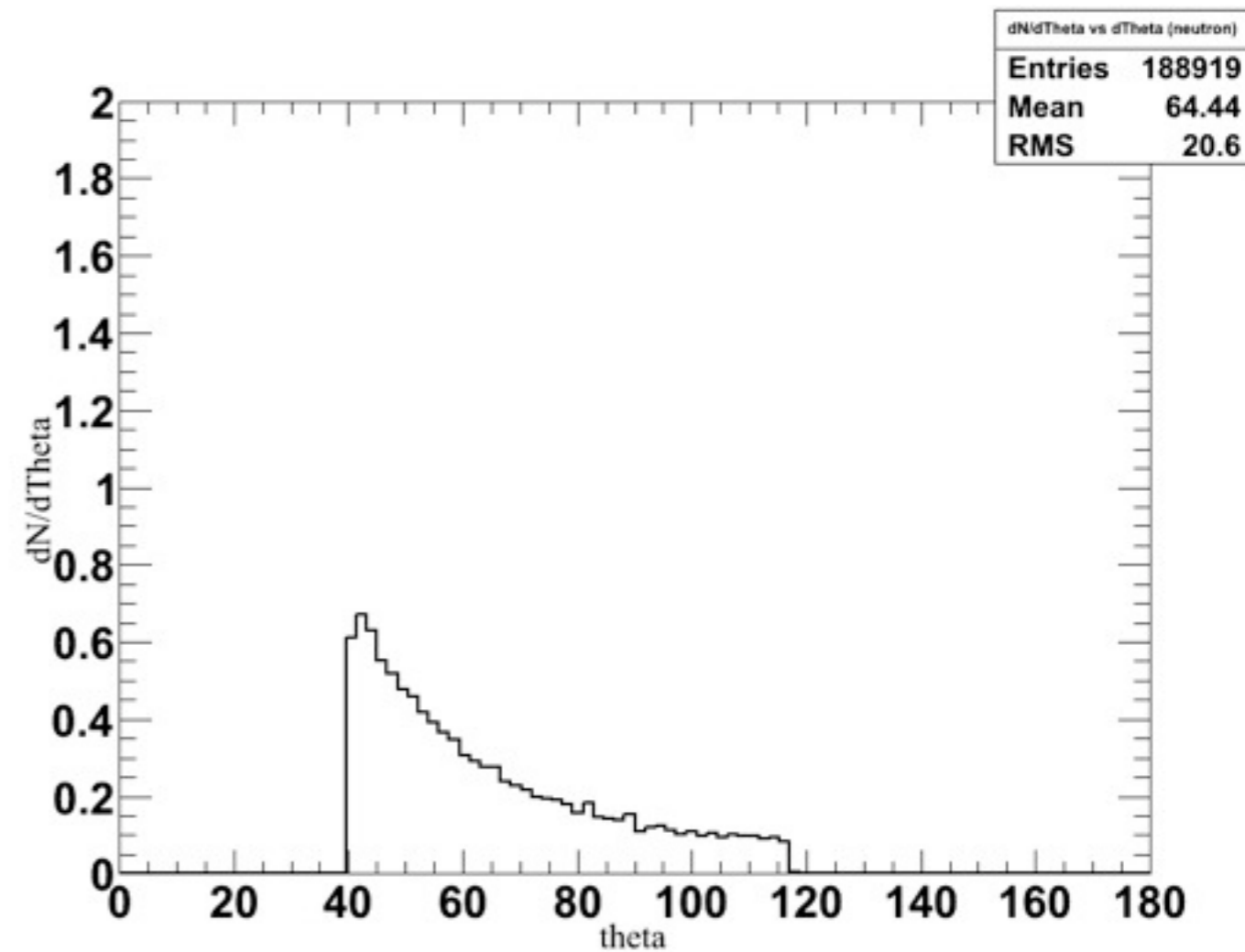
neutrons



Energy cut : 1 MeV | bin = 1 module

dN/dTheta

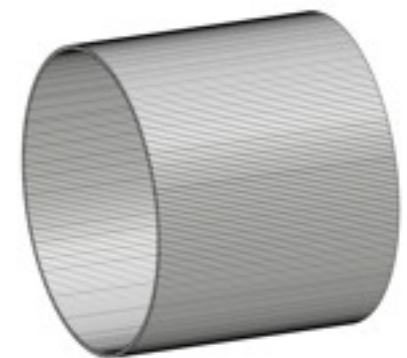
per event



charged particles

: except for muons and electrons

neutrons



Energy cut : 1 MeV | bin = 1 module

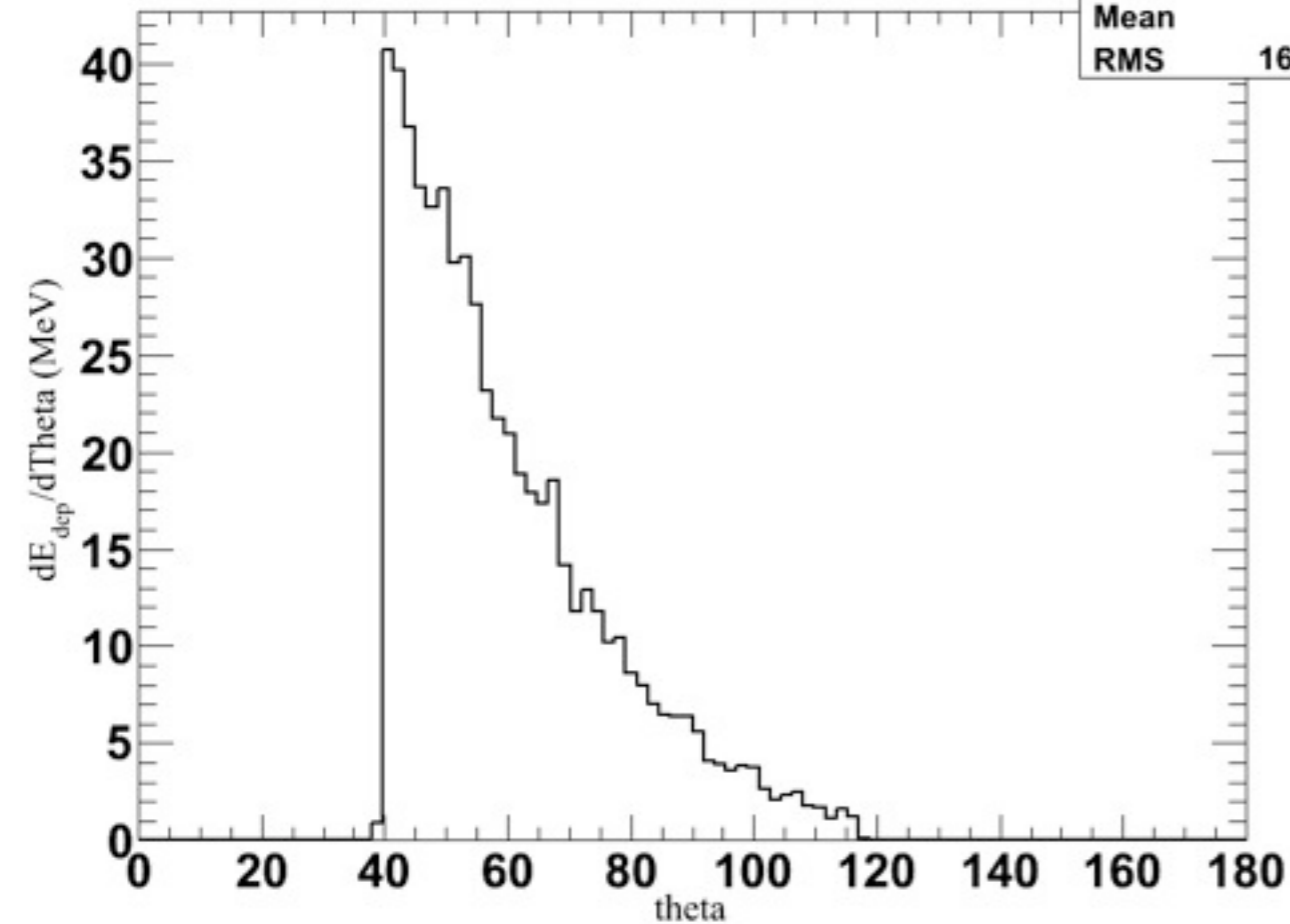
dE/dTheta

per event

dE/dTheta vs dTheta (charged)

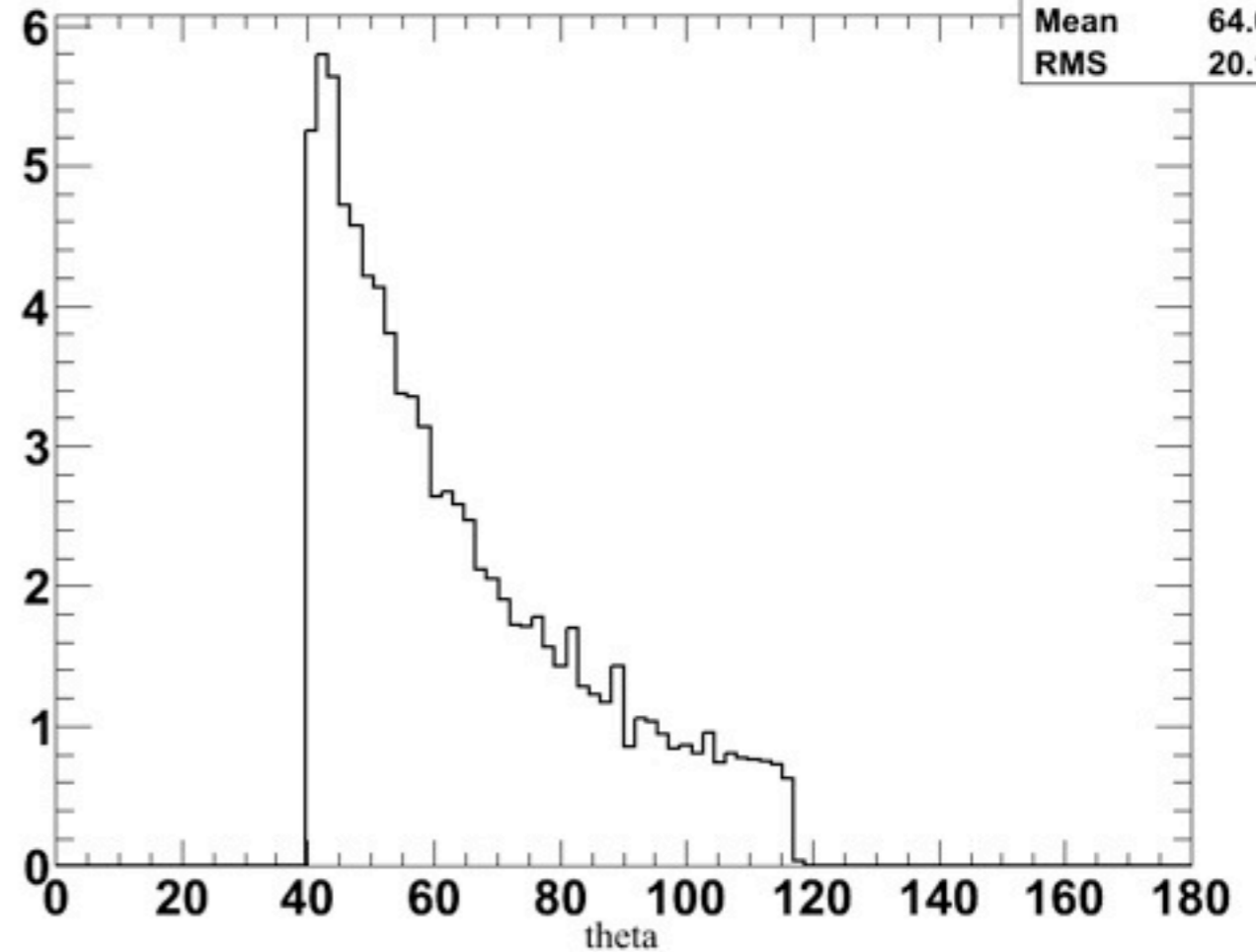
dE/dTheta vs dTheta (charged)

Entries	600451
Mean	60
RMS	16.79



dE/dTheta vs dTheta (neutron)

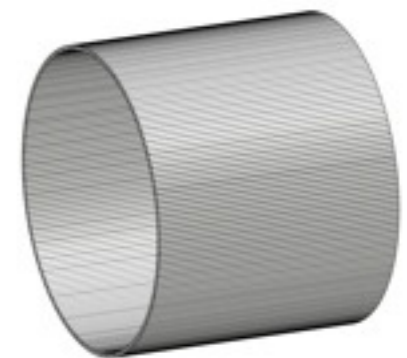
Entries	188919
Mean	64.06
RMS	20.17



charged particles

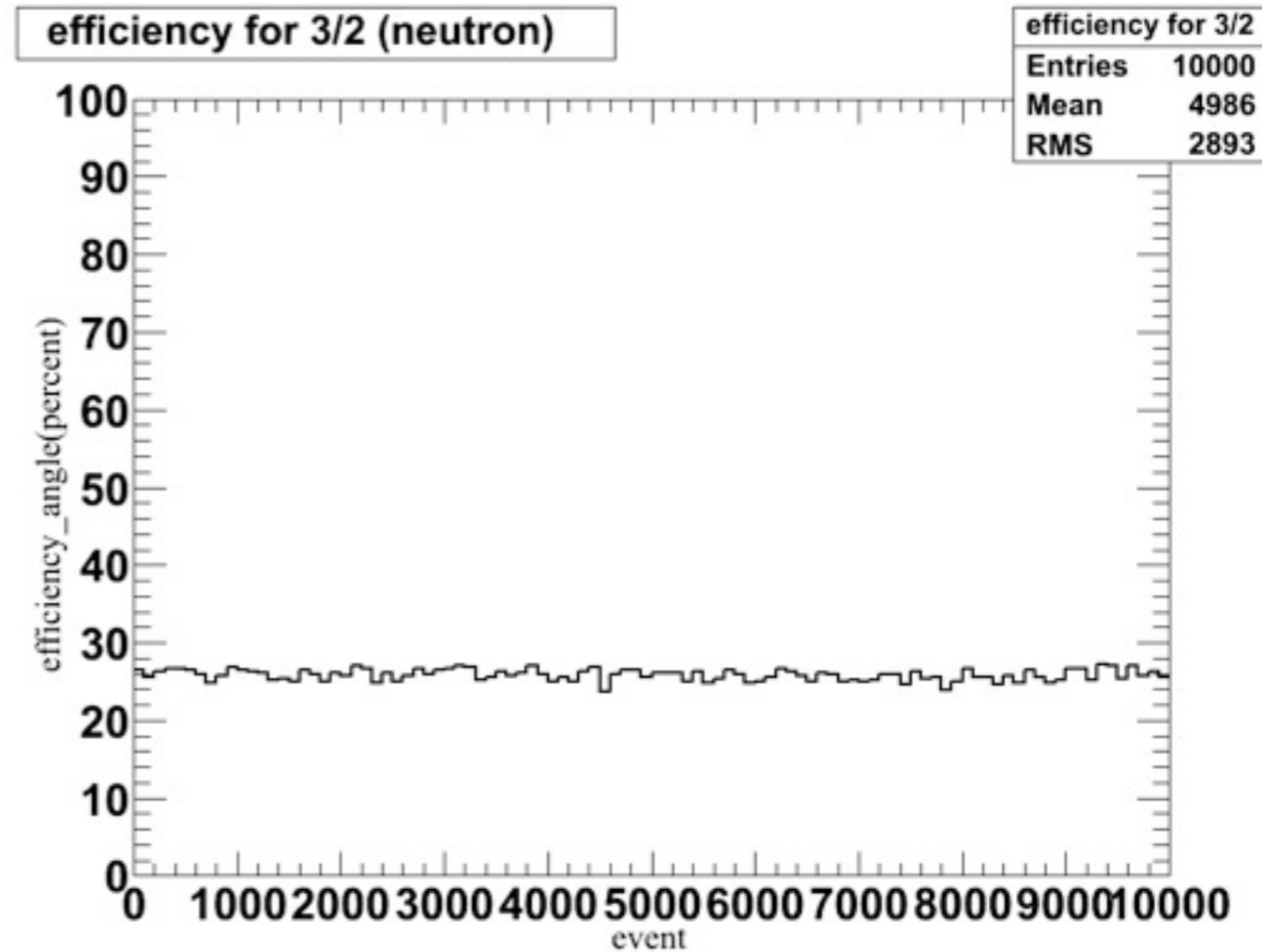
: except for muons and electrons

neutrons



Energy cut : 1 MeV | bin = 1 module

Efficiency 3/2 per event



charged particles

: except for muons and electrons

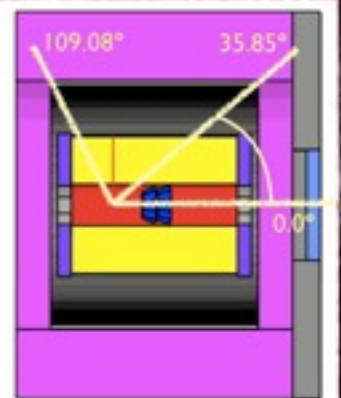
neutrons

efficiency average

charged particles : approx. 65 %

neutrons : approx. 29 %

1. The number of **particles** generated at the primary vertex in IQMD data.
2. The number of **particles** which come in the detector angle.
3. The number of **particles** which is detected at the detector by simulation.



particles : neutrons or charged particles

Multiplicity

per event

Various multiplicities

	150 A·MeV	250 A·MeV
proton	26.1 ± 1.4	31.9 ± 1.6
deuteron	18.6 ± 1.0	23.0 ± 1.2
triton	17.2 ± 0.9	21.0 ± 1.1
^3He	5.7 ± 0.3	9.1 ± 0.5
^4He	21.0 ± 1.1	18.2 ± 1.0
neutron	92.6 ± 10.8	97.9 ± 8.2
charged particle	99.0 ± 0.7	110.7 ± 0.8

82.0778
13.5434
2.6208
0
0.8613
129.0284
99.9402

Central collisions of Au on Au at 150, 250 and 400 A MeV FOPI Collaboration

IQMD 250 MeV data

Ratio : paper data/IQMD data

$$\text{charged particle} \frac{110.7}{99.9402} \approx 1.11 \quad \text{neutron} \frac{97.9}{129.0248} \approx 0.76$$

Future Plan

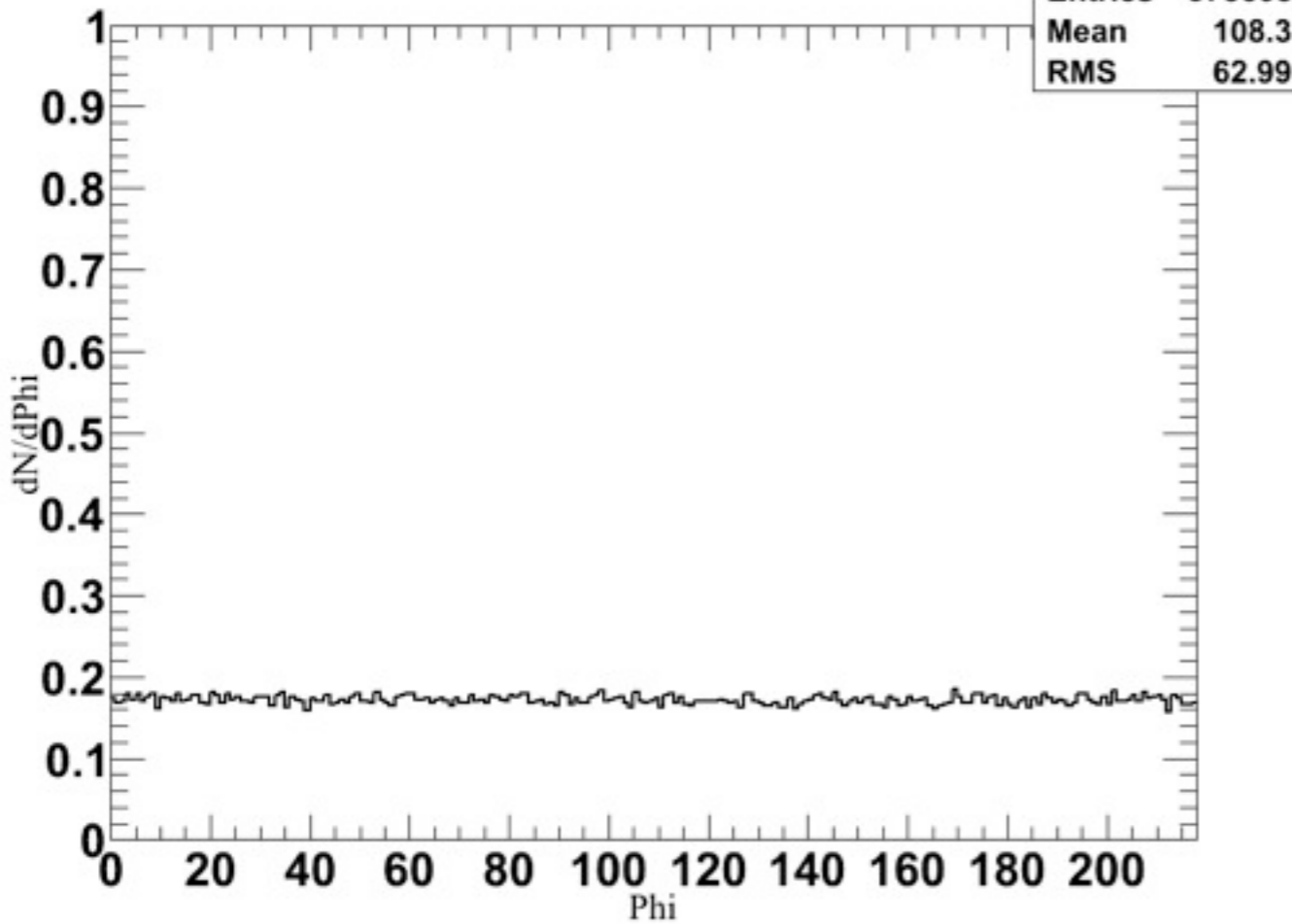
1. normalization in accordance with paper data.
2. change width of one module
: 25mm \longrightarrow 50 mm
(the number of modules : 108)

BACK UP

(지난주결과)

dN/dPhi

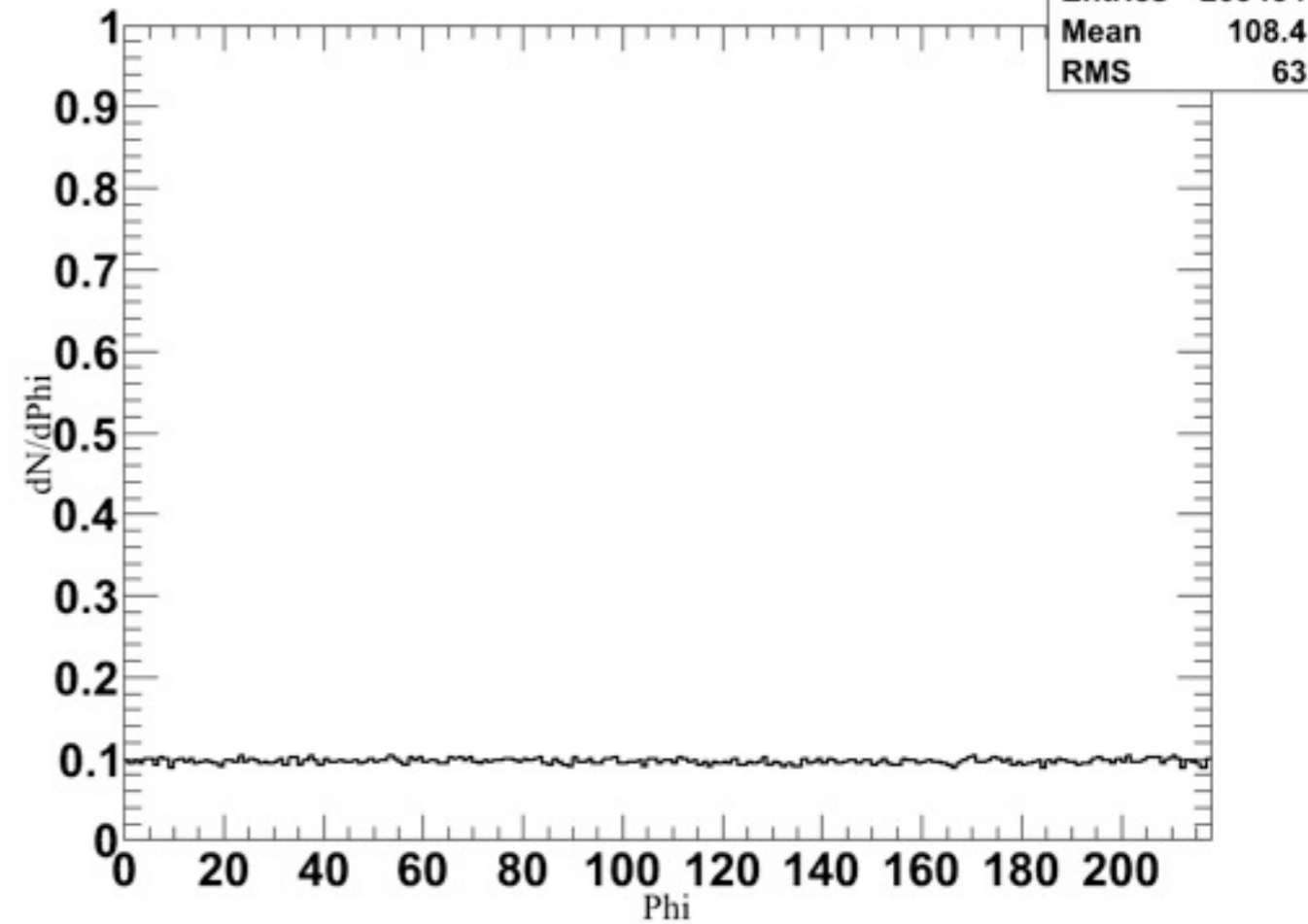
dN/dPhi vs dPhi (charged)



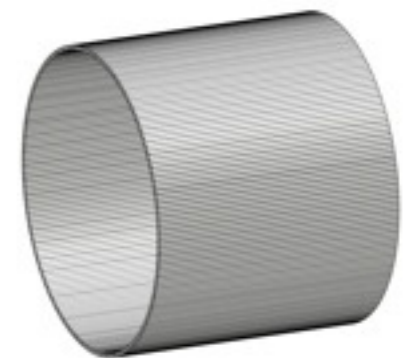
charged particles

: except for muons and electrons

dN/dPhi vs dPhi (neutron)

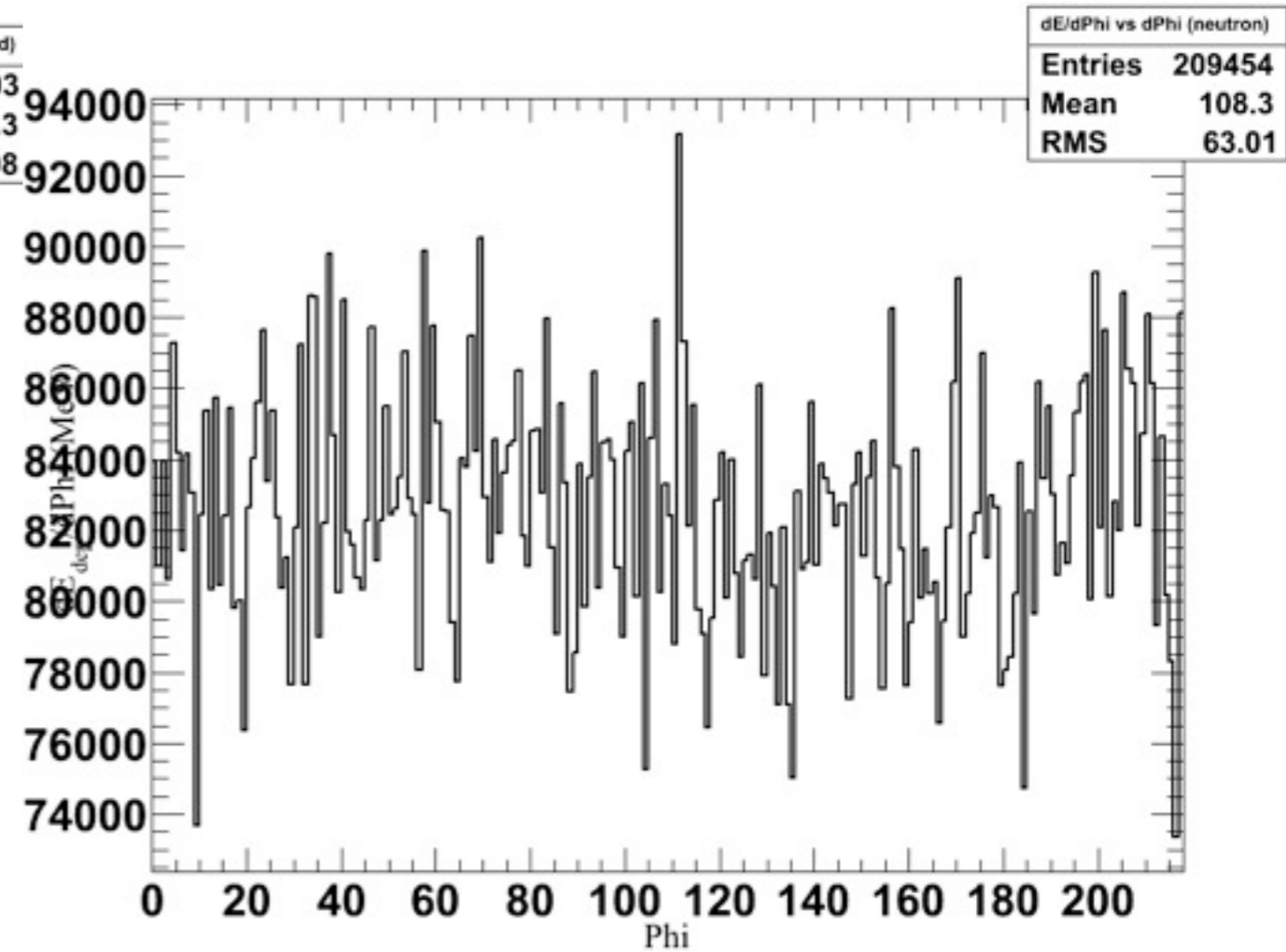
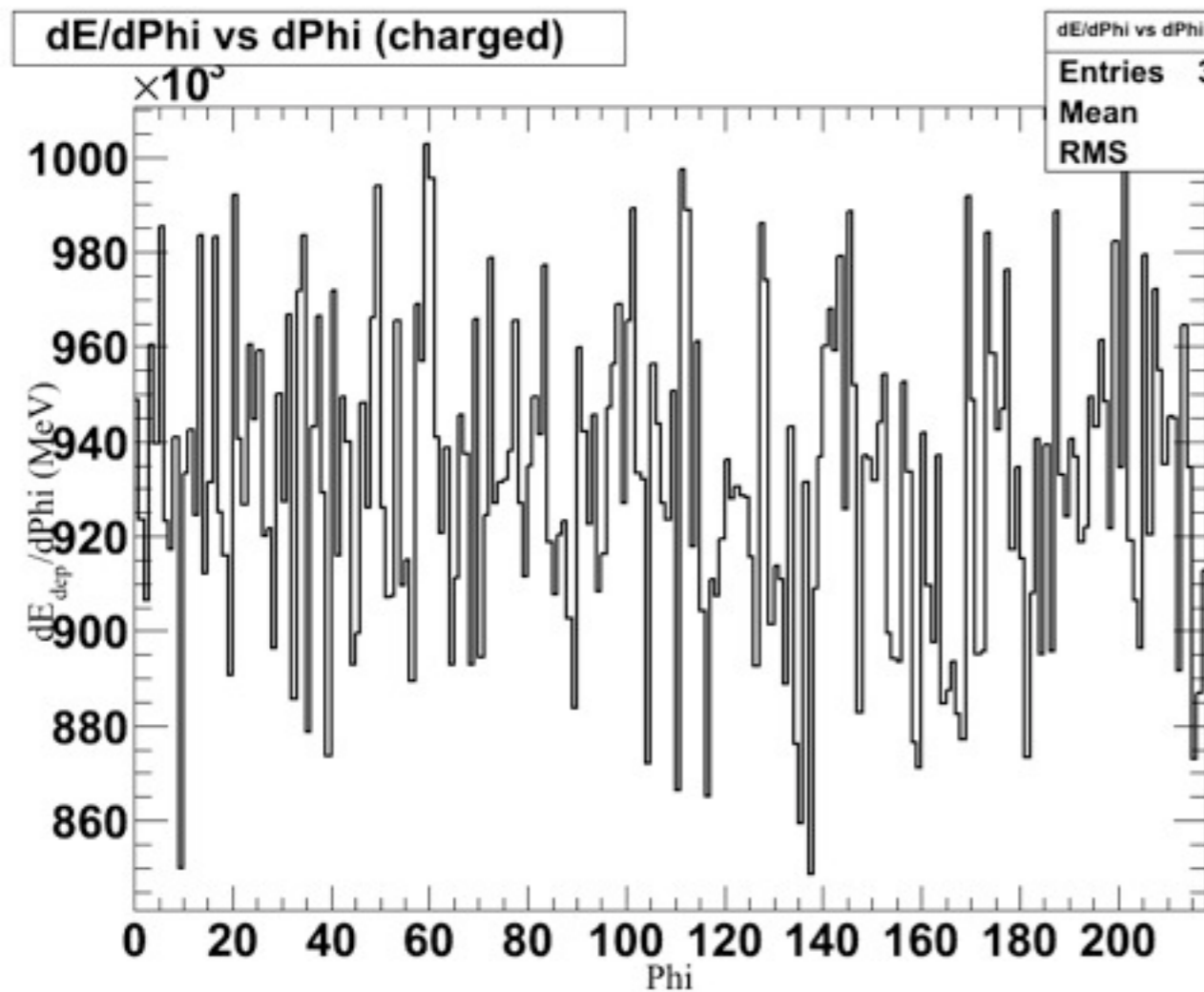


neutrons



Energy cut : 1 MeV | bin = 1 module

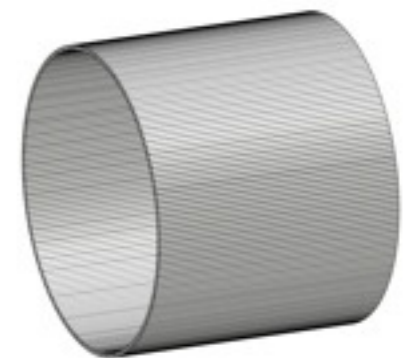
dE/dPhi



charged particles

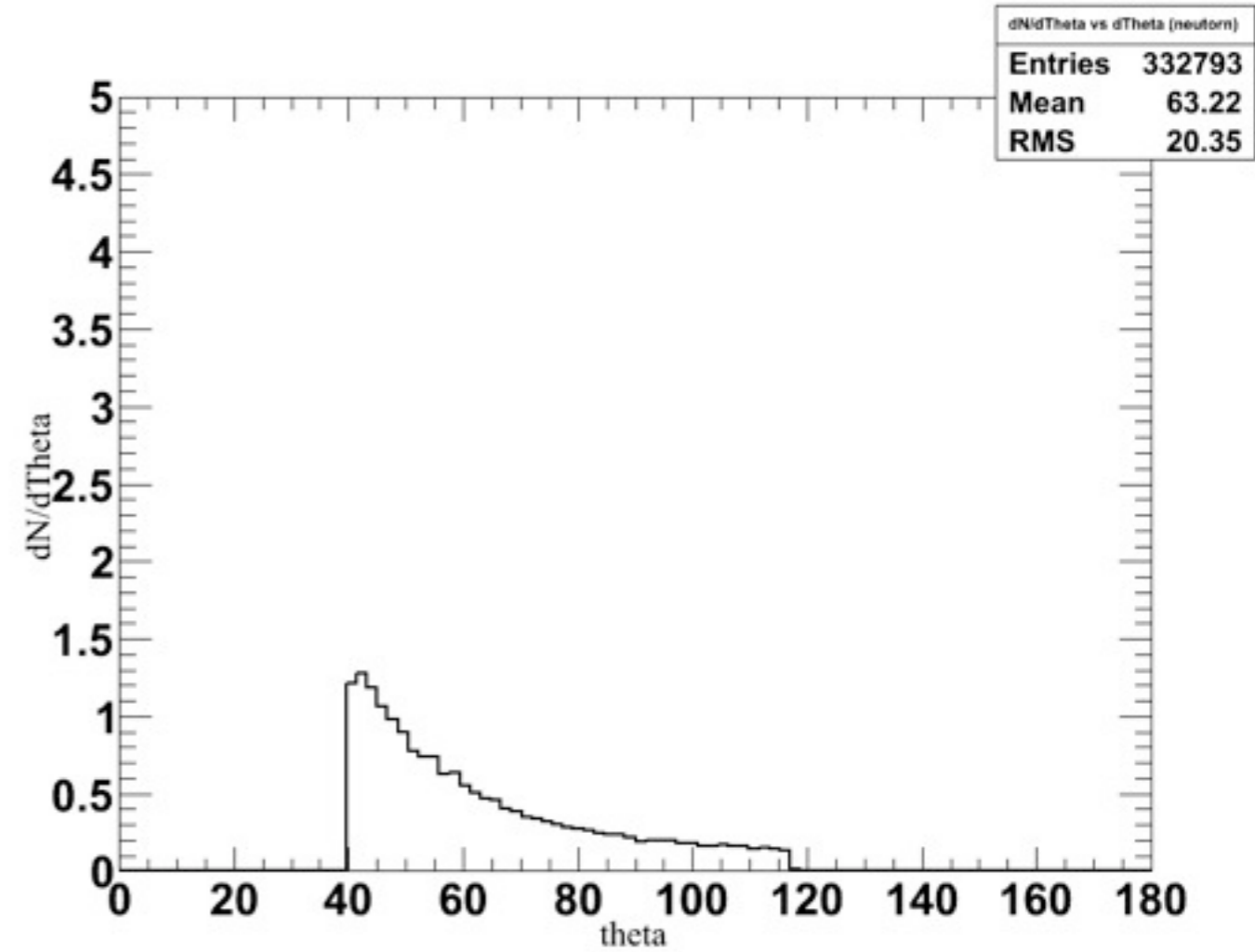
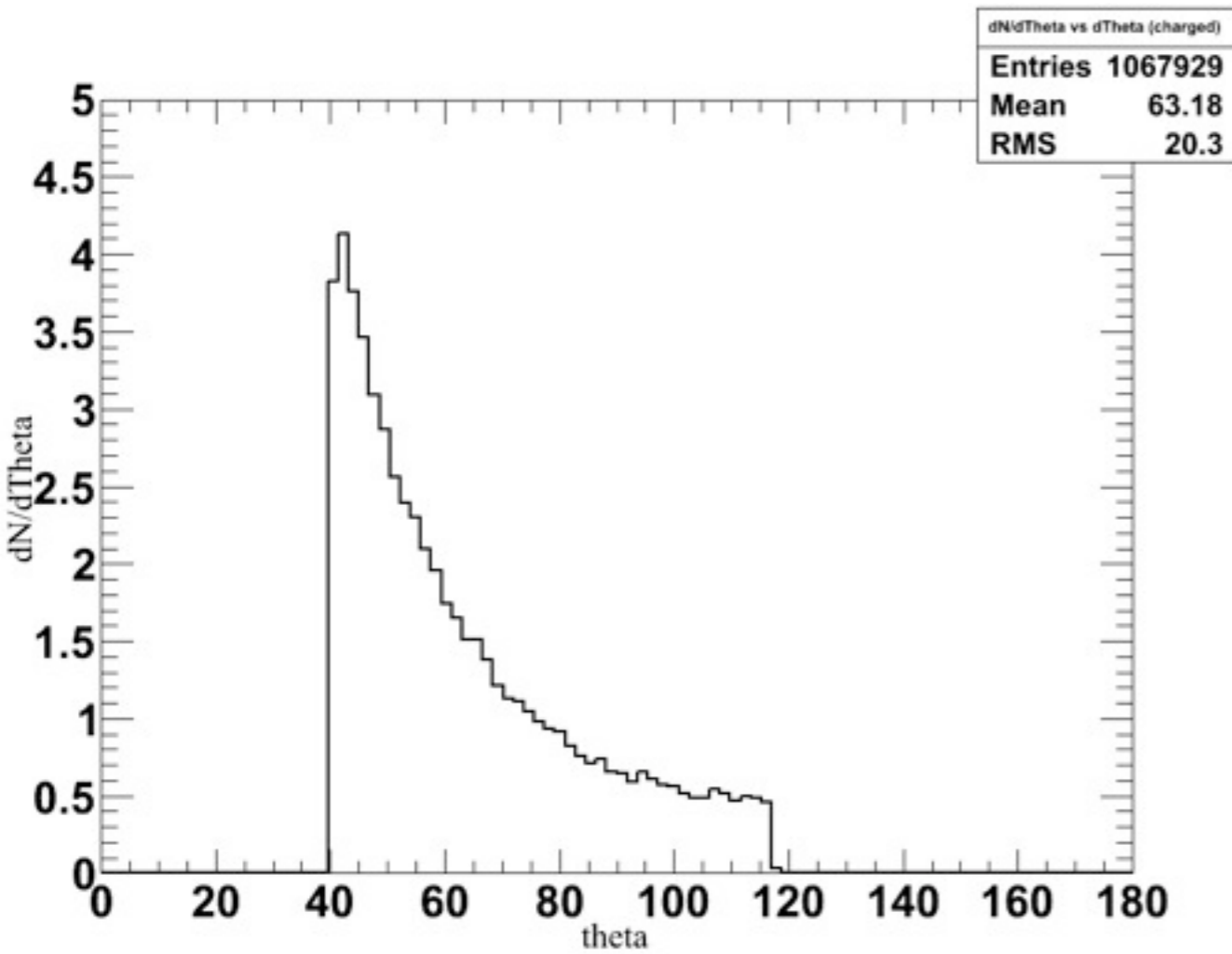
: except for muons and electrons

neutrons



Energy cut : 1 MeV | bin = 1 module

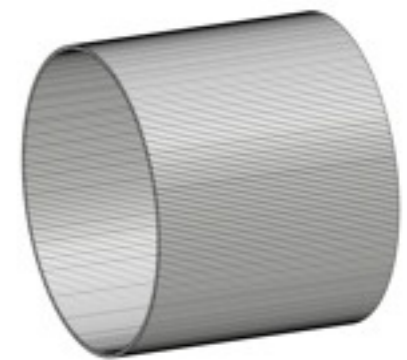
dN/dTheta



charged particles

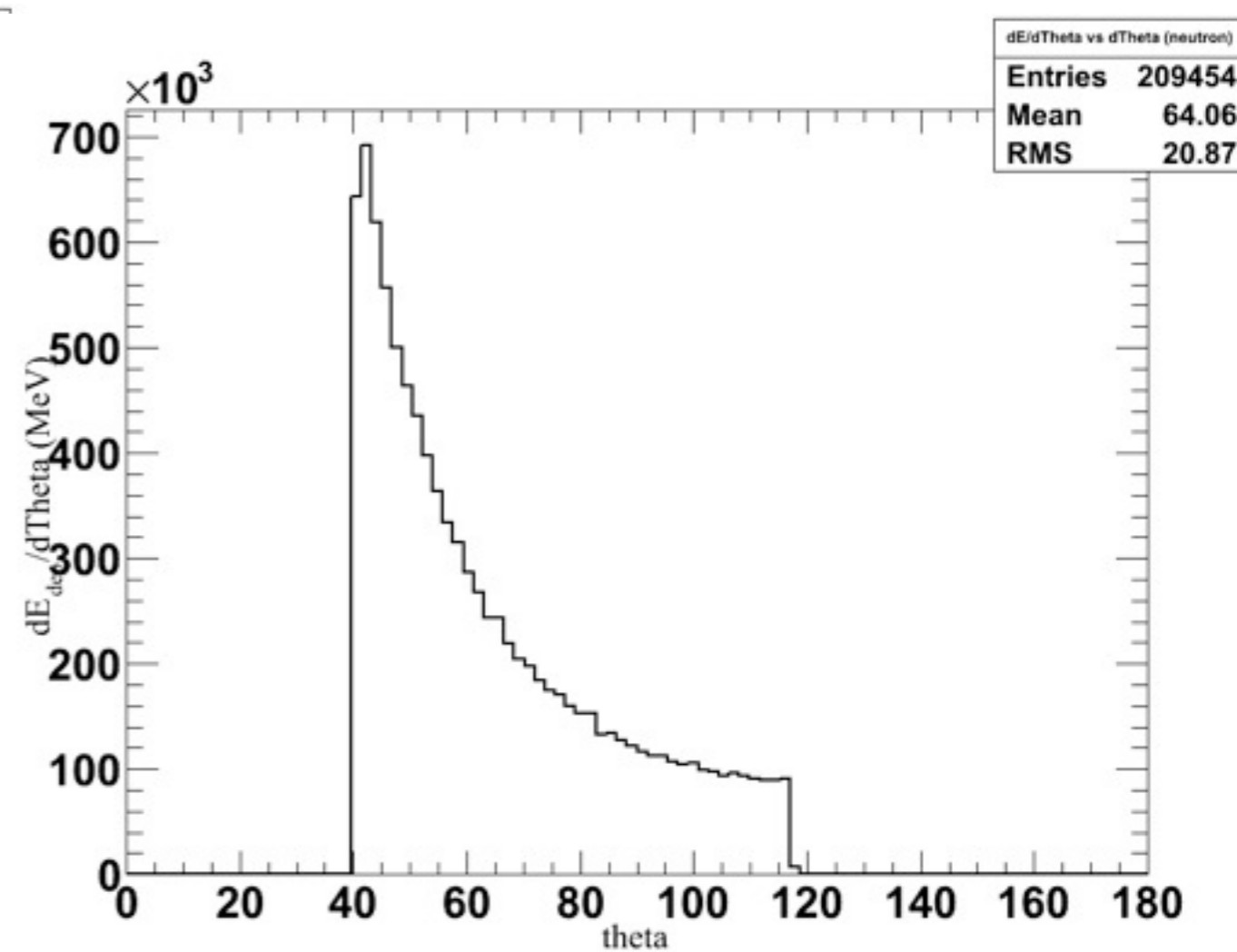
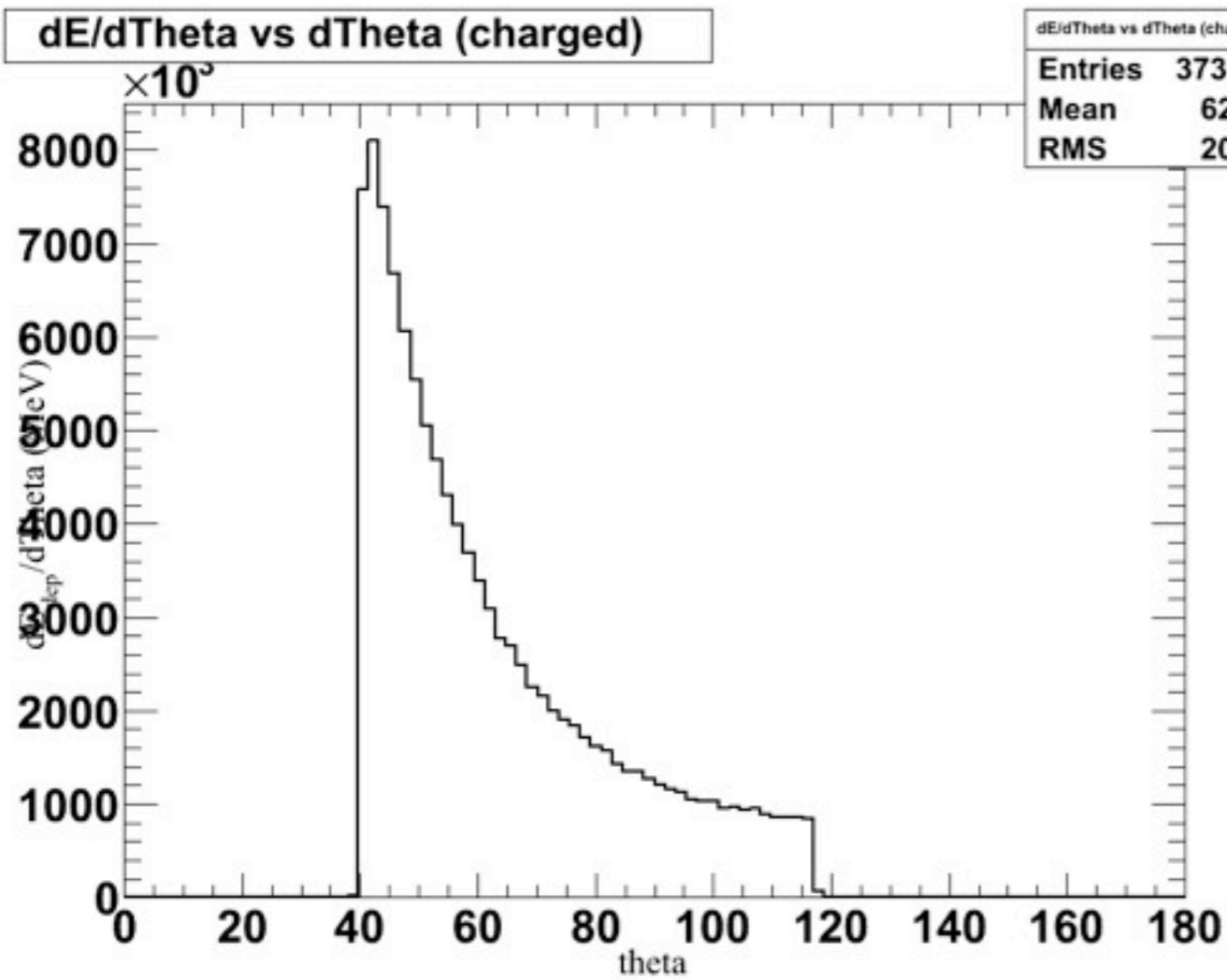
: except for muons and electrons

neutrons



Energy cut : 1 MeV | bin = 1 module

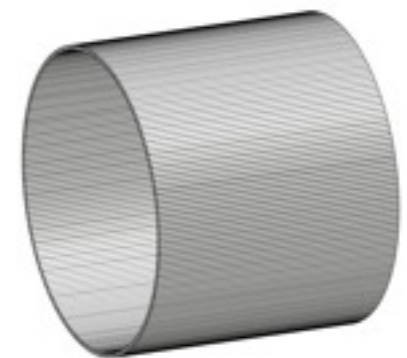
dE/dTheta



charged particles

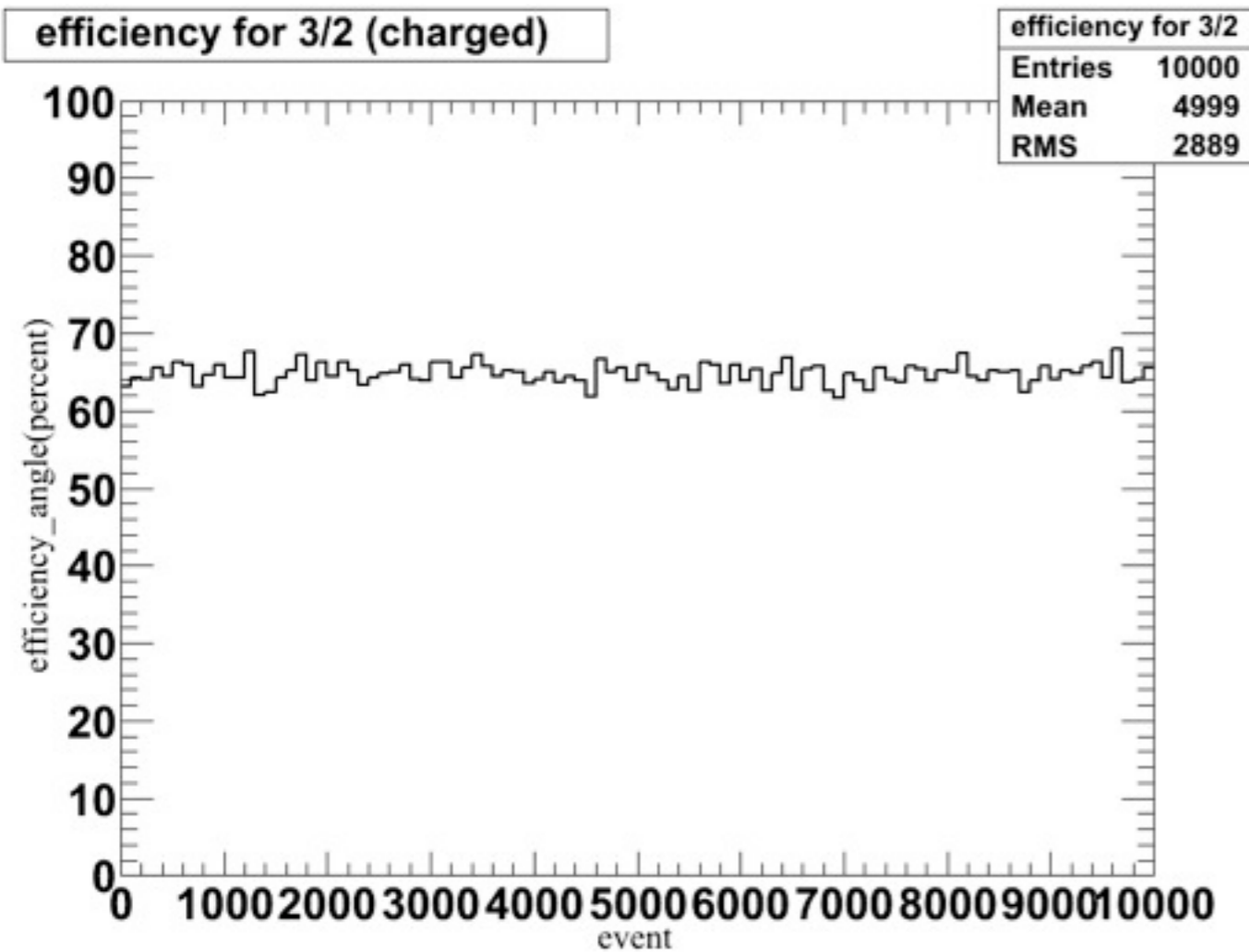
: except for muons and electrons

neutrons



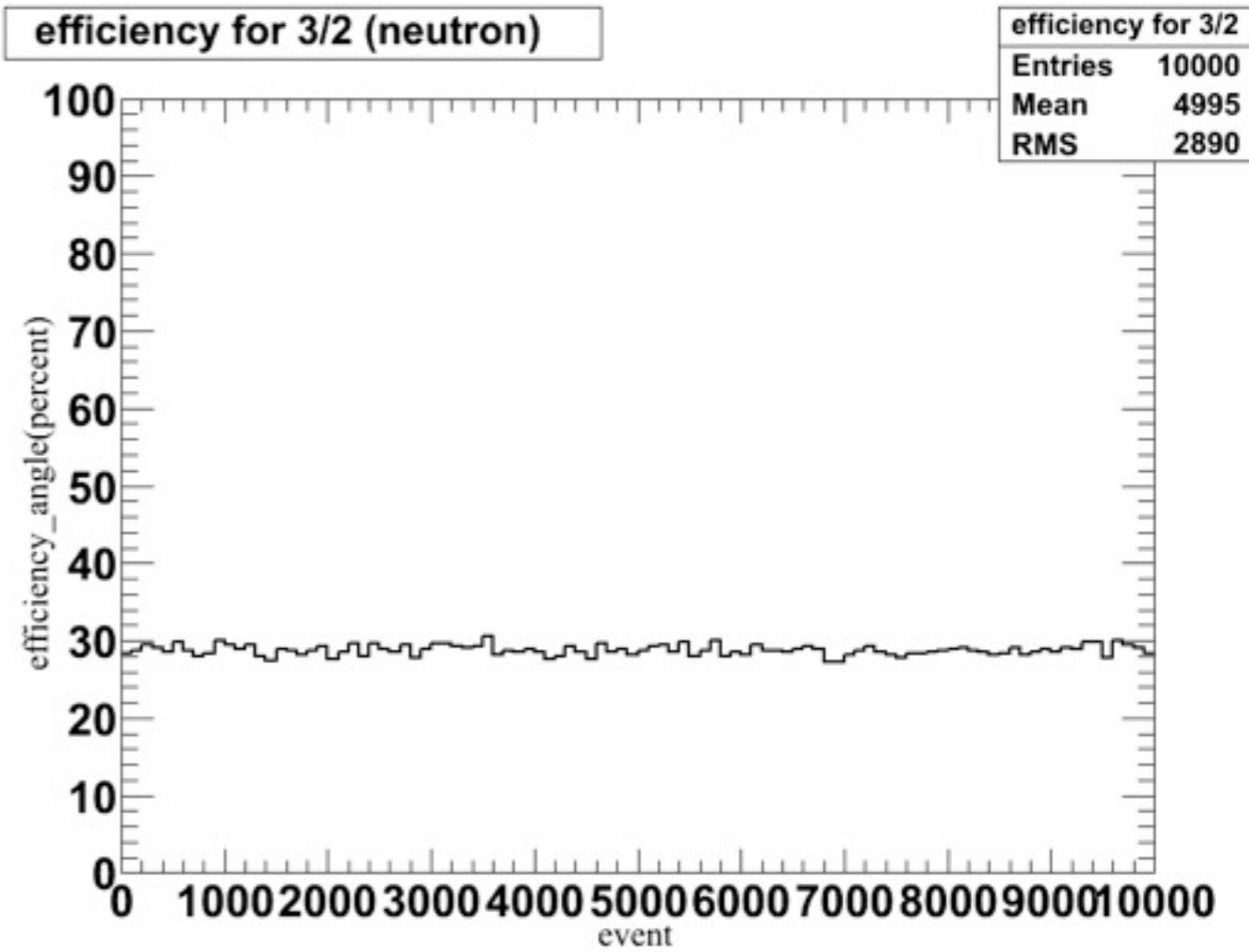
Energy cut : 1 MeV | bin = 1 module

Efficiency 3/2 per event



charged particles

: except for muons and electrons



neutrons

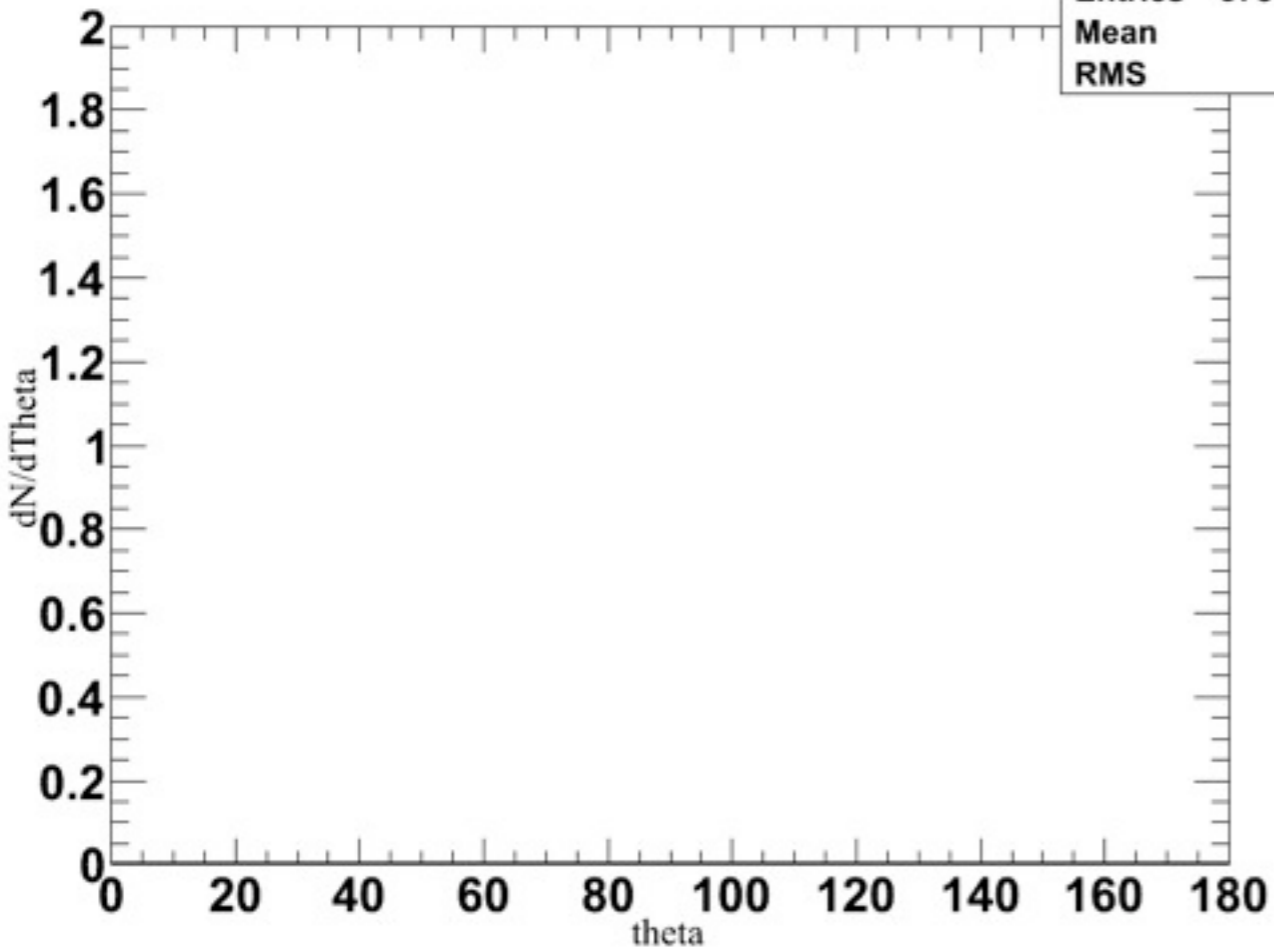
efficiency average
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particles : neutrons or charged particles

dN/dTheta

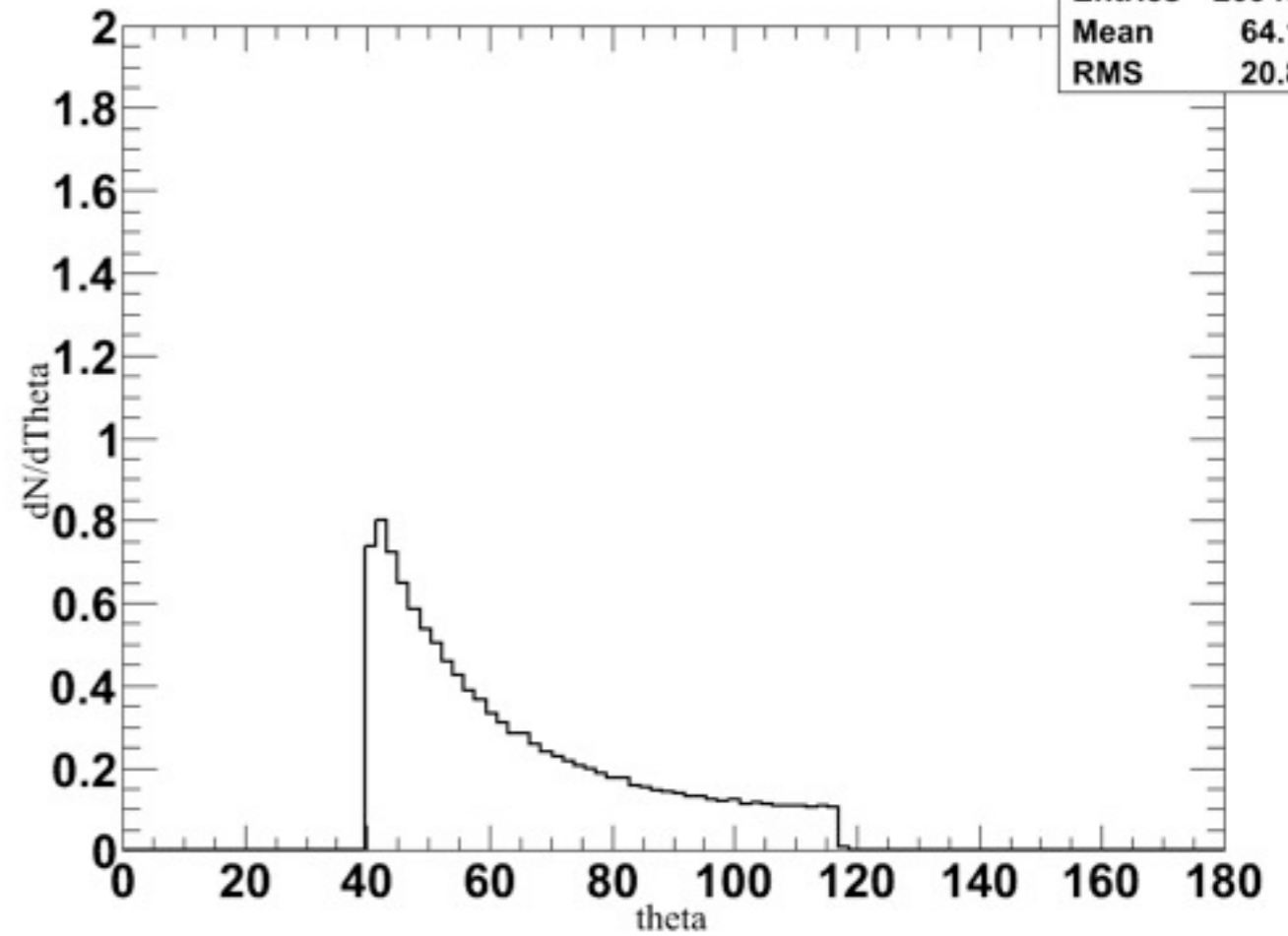
dN/dTheta vs dTheta (charged)



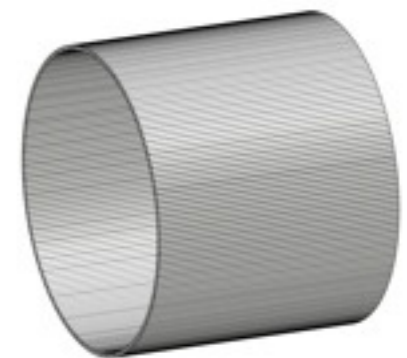
charged particles

: except for muons and electrons

dN/dTheta vs dTheta (neutron)



neutrons



Energy cut : 1 MeV | bin = 1 module