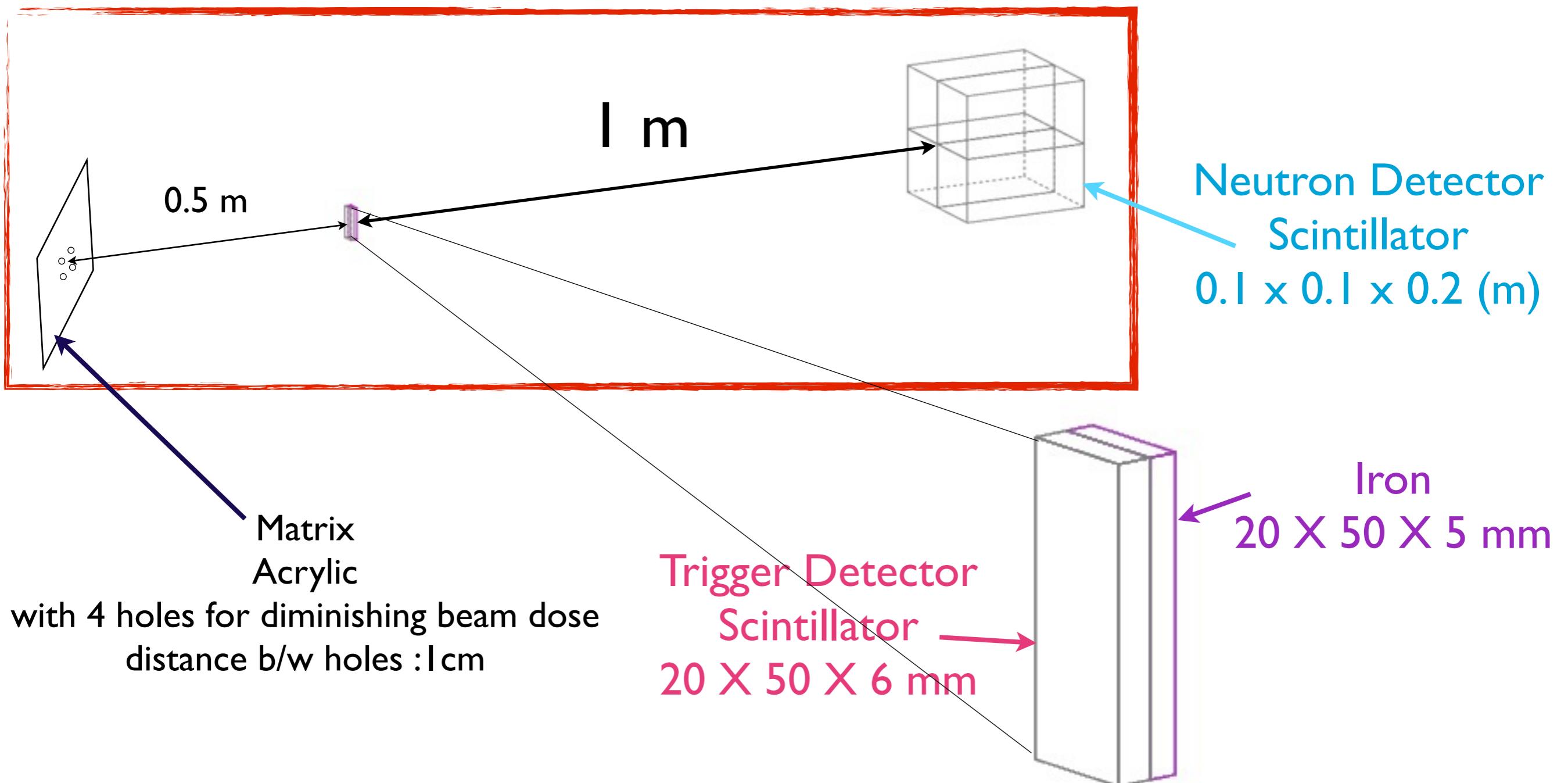


Simulation for Making Neutron Beam

2013.03.11.Tue.
Go Yeonju

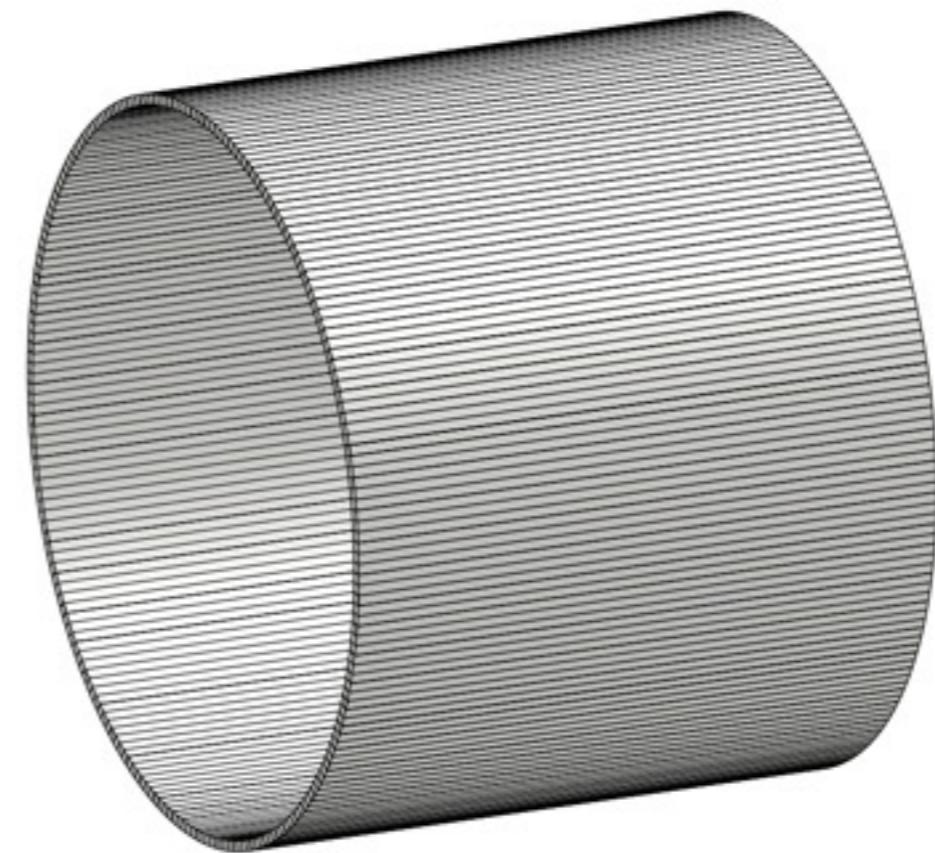
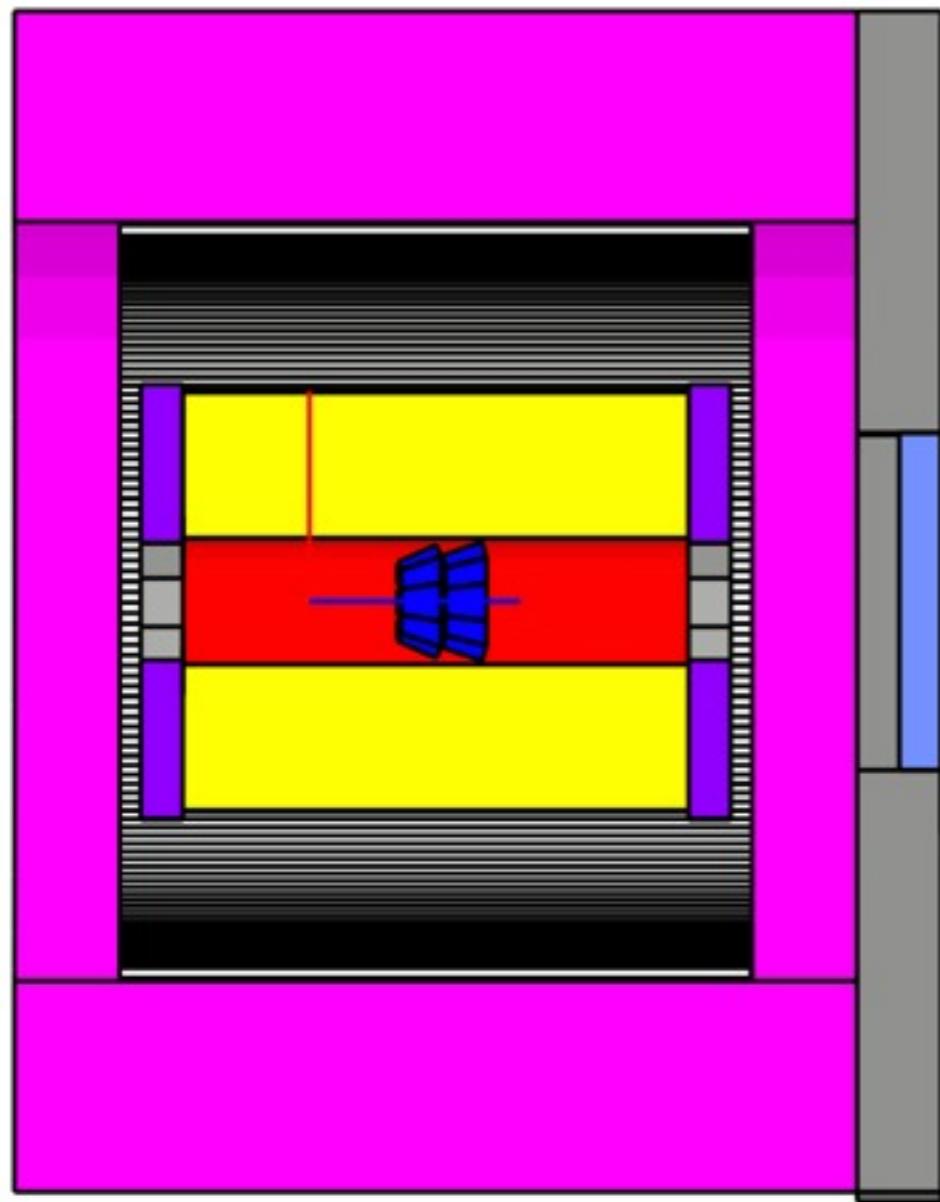


$$10^6 \rightarrow |129| \simeq 10^4 \rightarrow 82 \simeq 10^2$$

Simulation of Detector surrounding TPC

2013.03.11.Tue.
Go Yeonju

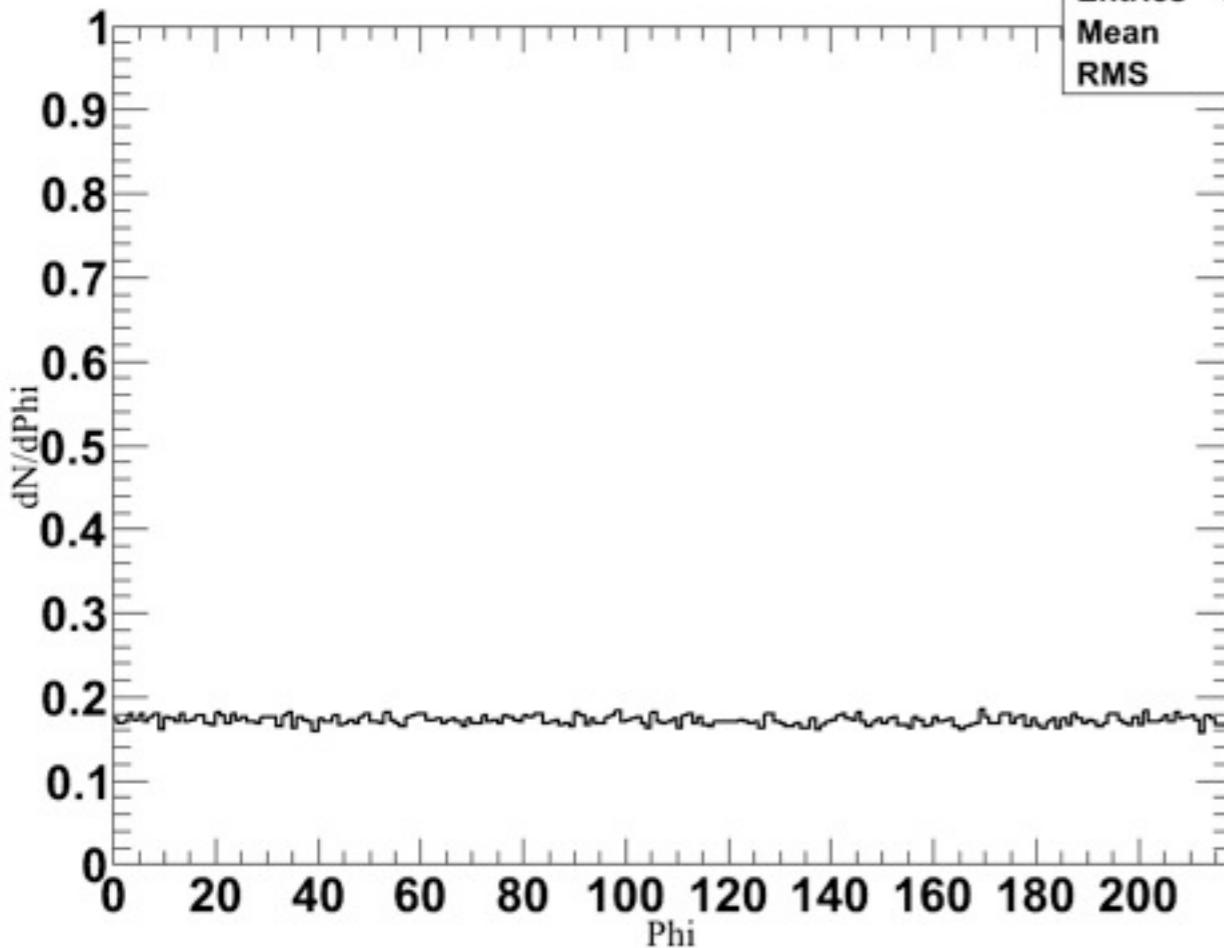
Detector Surrounding TPC



Size of one module
2.5 cm X 2.5 cm X 1.5 m

dN/dPhi

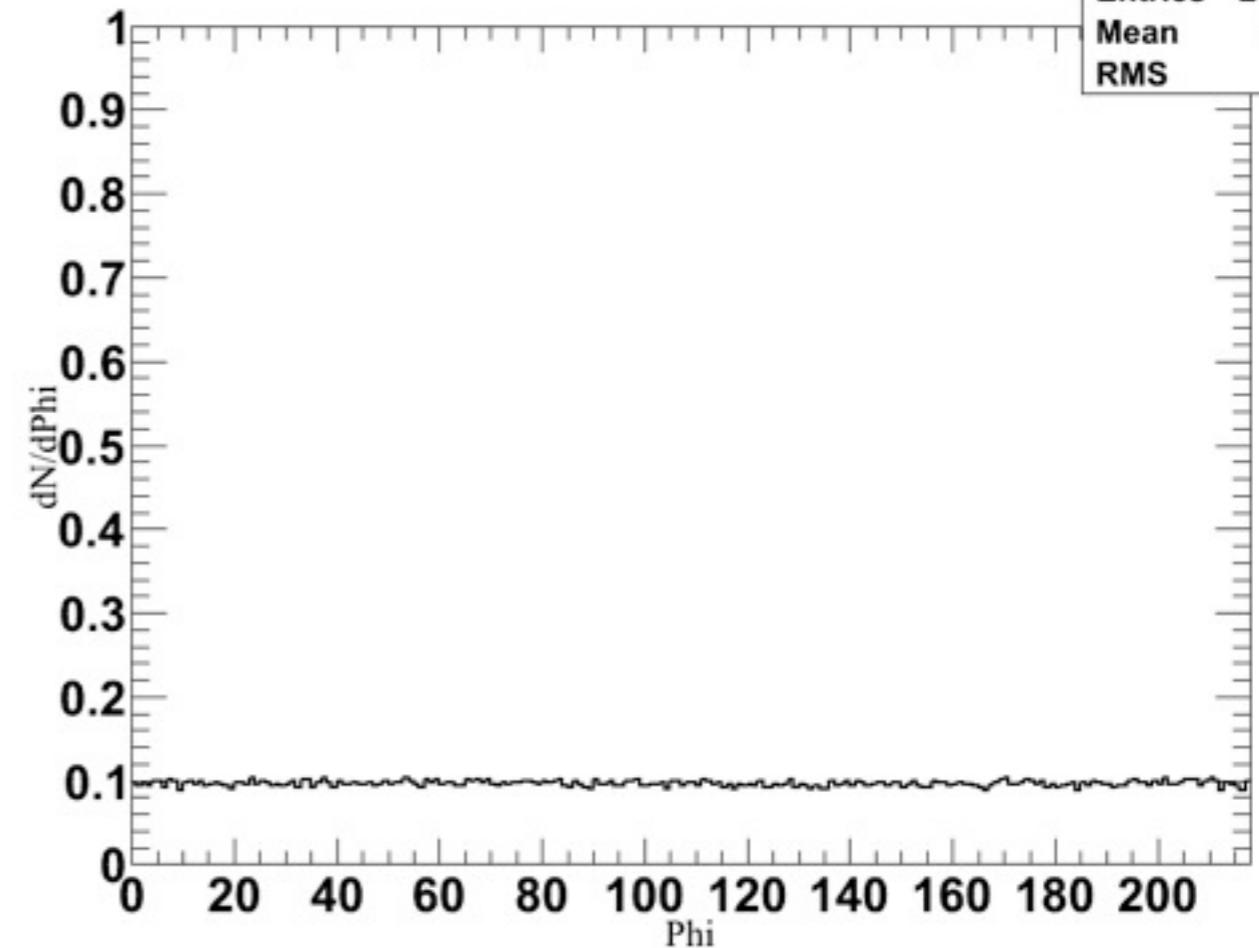
dN/dPhi vs dPhi (charged)



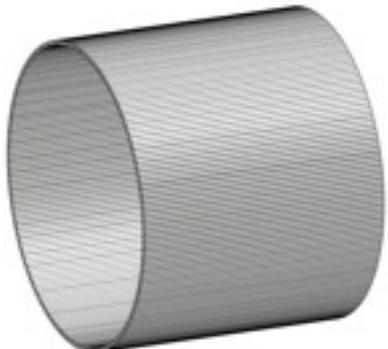
charged particles

: except for muons and electrons

dN/dPhi vs dPhi (charged)



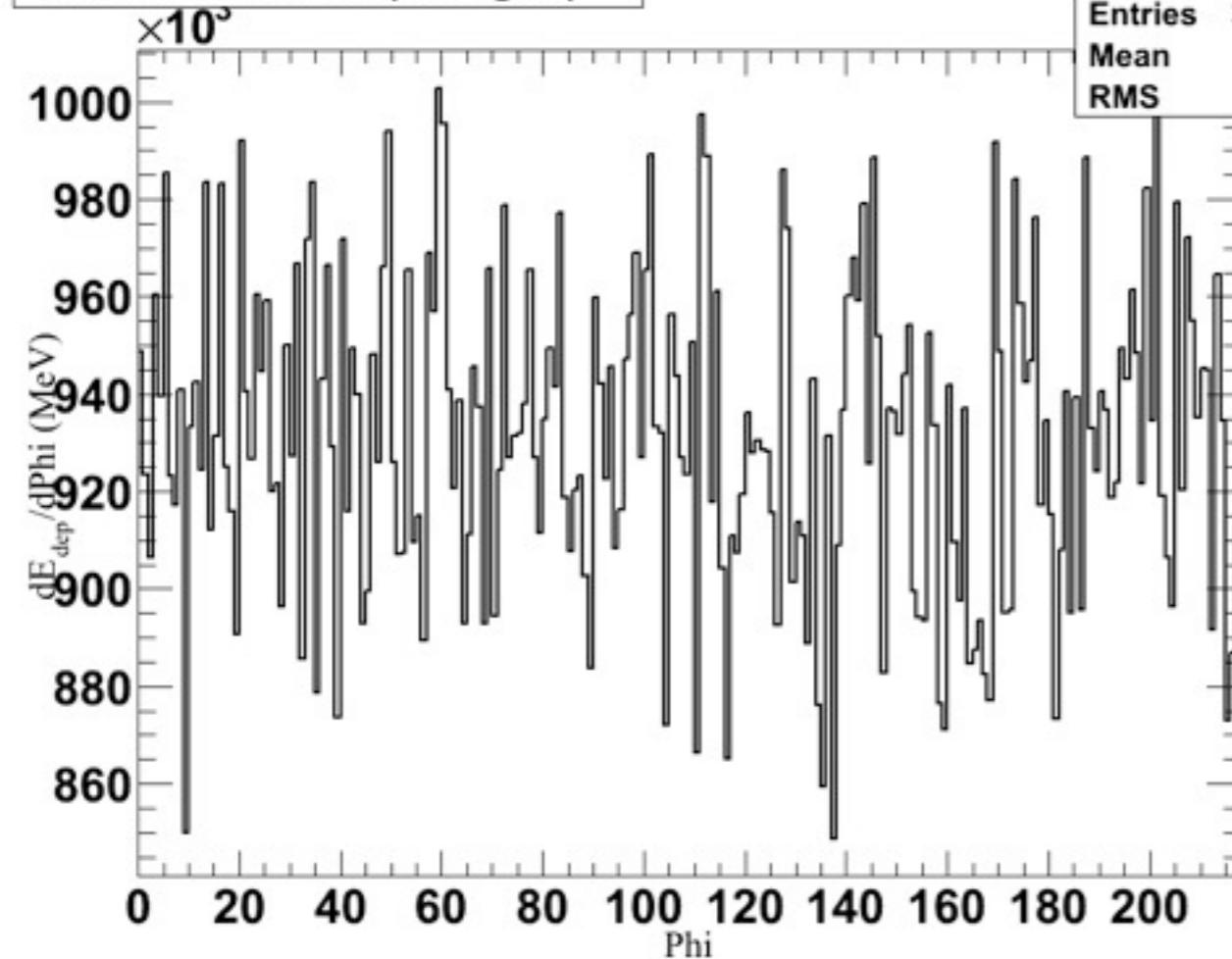
neutrons



Energy cut : 1 MeV 1 bin = 1 module

dE/dPhi

dE/dPhi vs dPhi (charged)

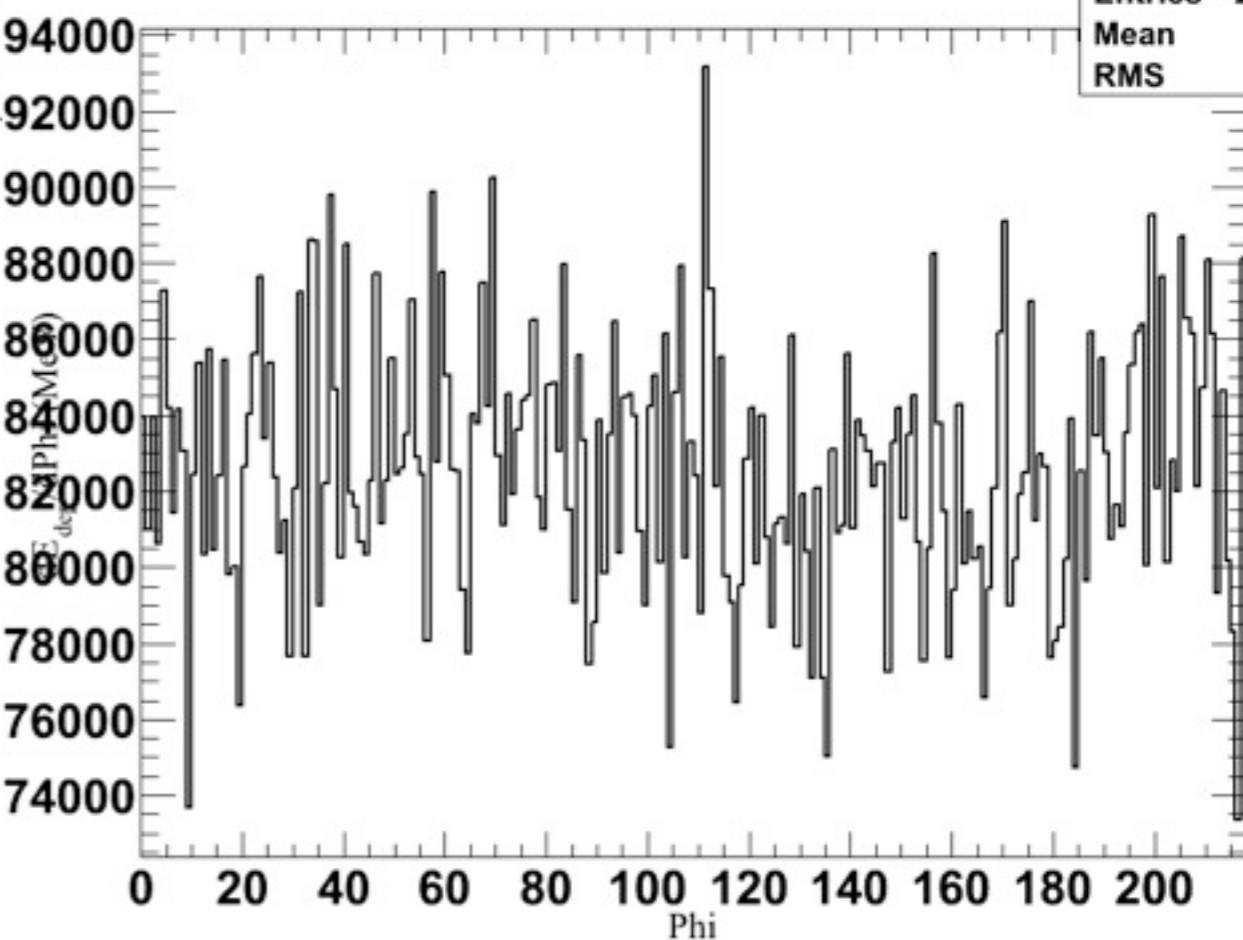


dE/dPhi vs dPhi (charged)

Entries 373603
Mean 108.3
RMS 62.98

dE/dPhi vs dPhi (neutron)

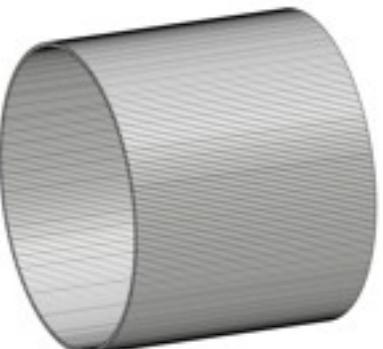
Entries 209454
Mean 108.3
RMS 63.01



charged particles

: except for muons and electrons

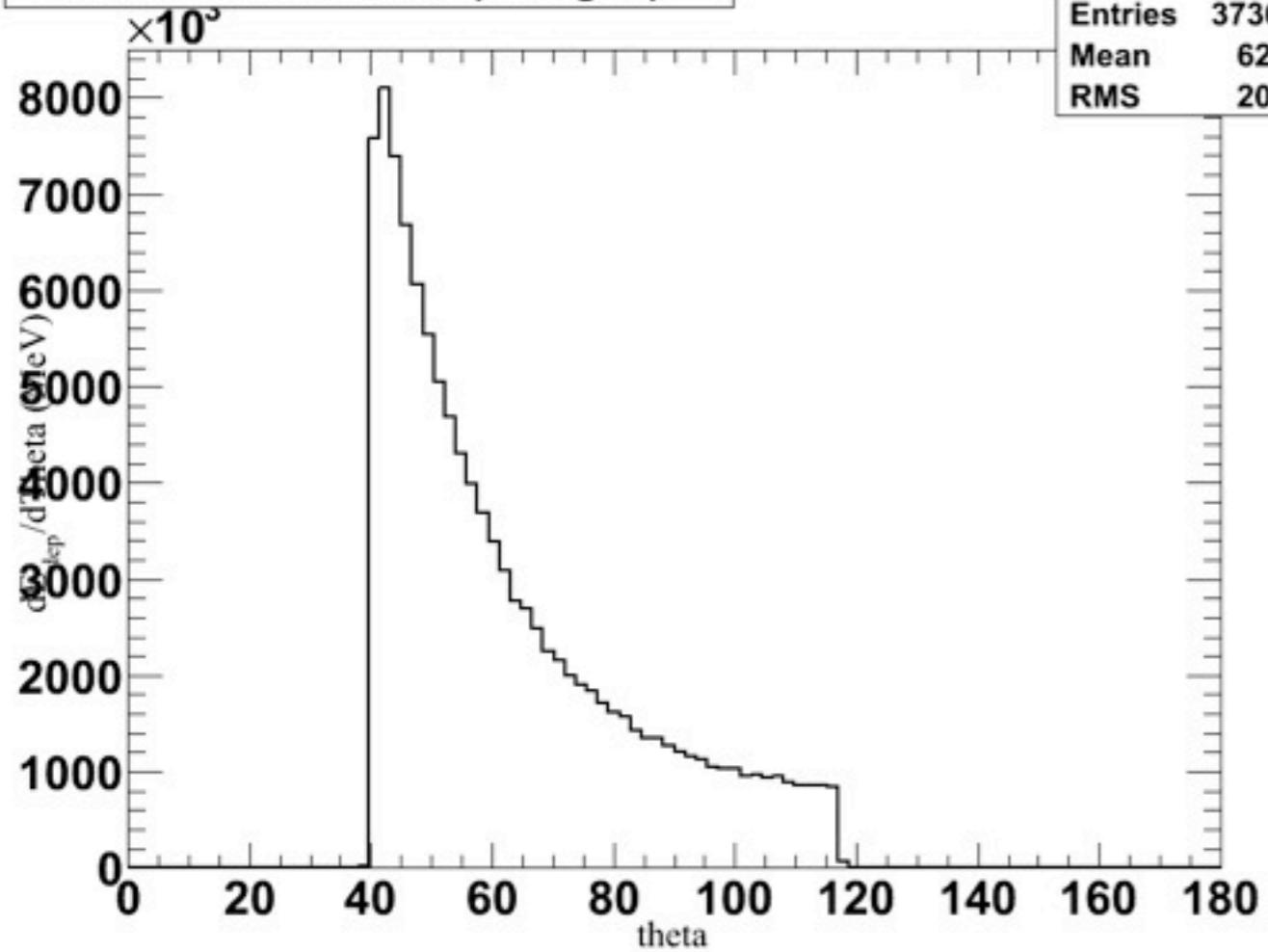
neutrons



Energy cut : 1 MeV 1 bin = 1 module

dE/dTheta

dE/dTheta vs dTheta (charged)

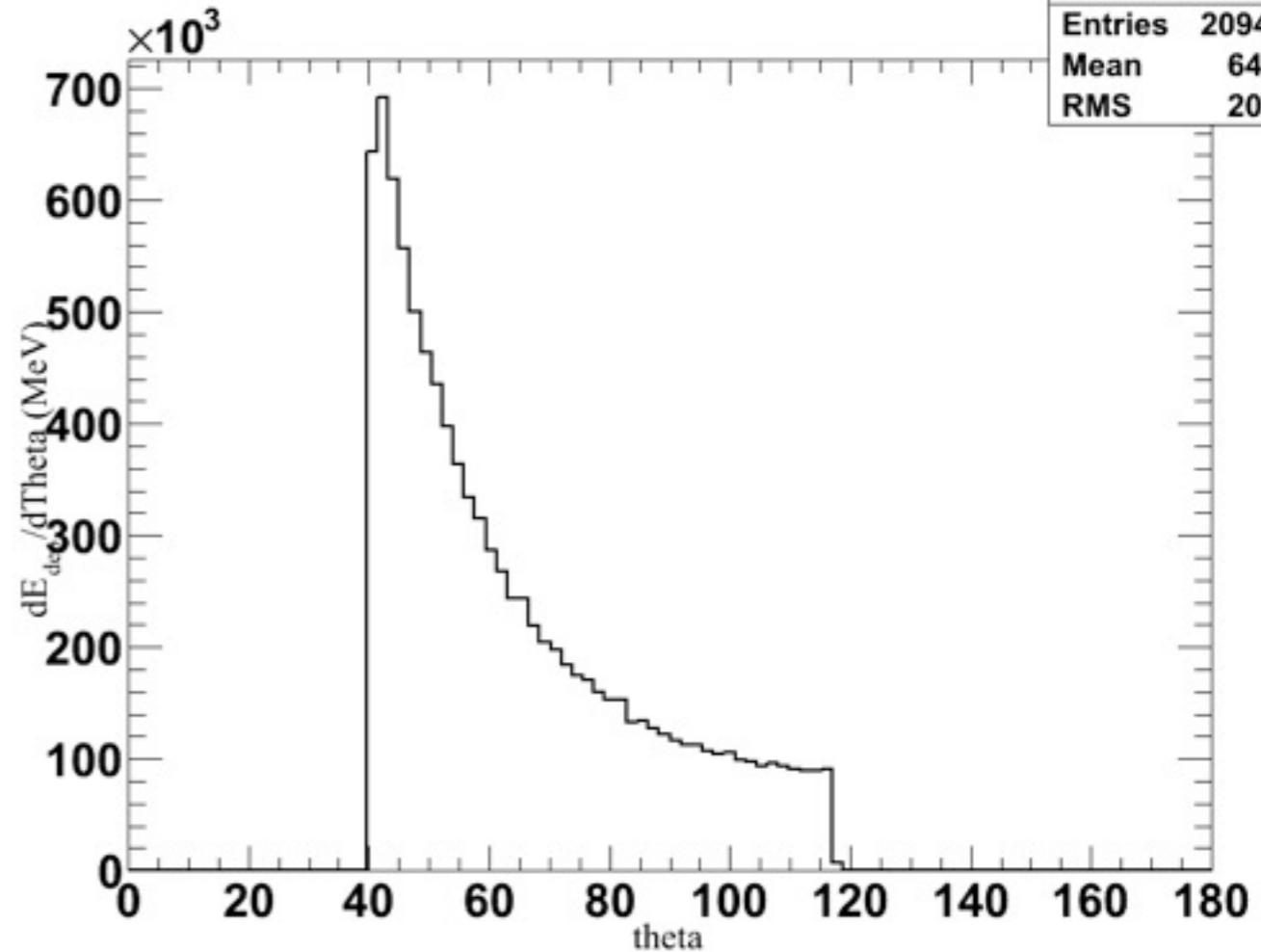


charged particles

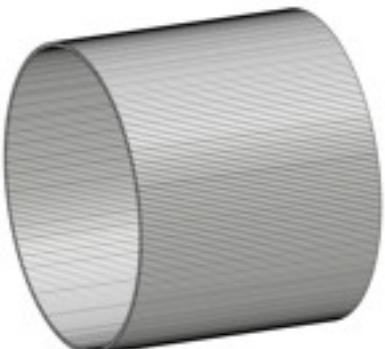
: except for muons and electrons

dE/dTheta vs dTheta (charged)

Entries 373603
Mean 62.66
RMS 20.13



neutrons

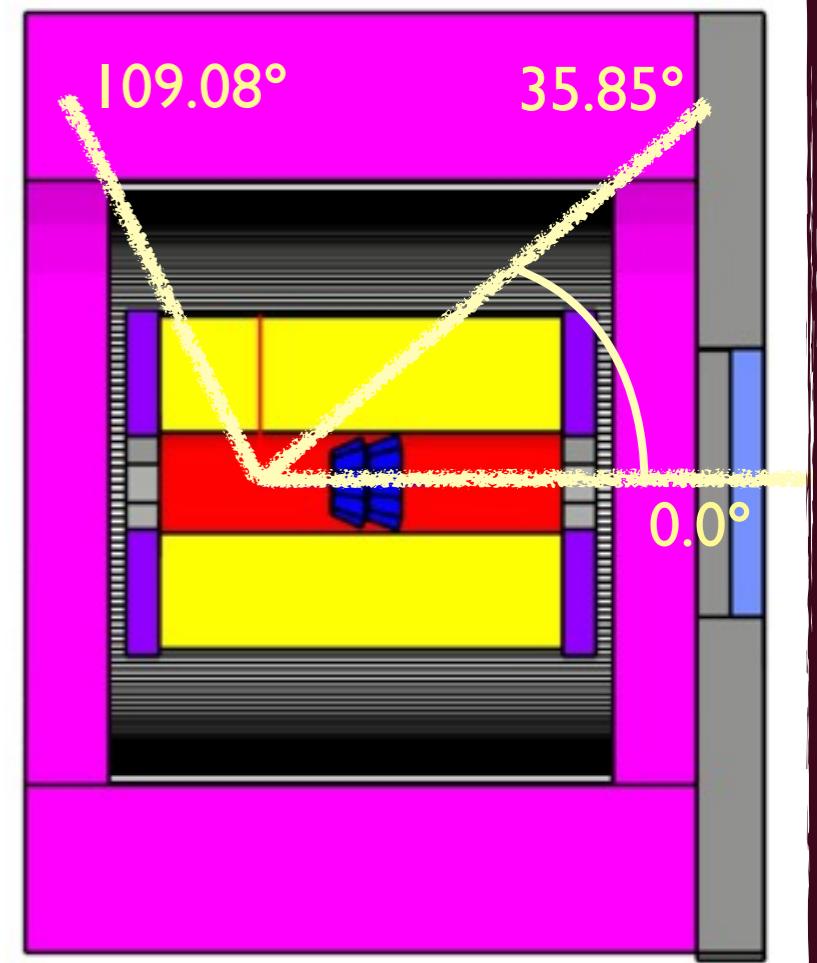


Energy cut : 1 MeV 1 bin = 1 module

Efficiency

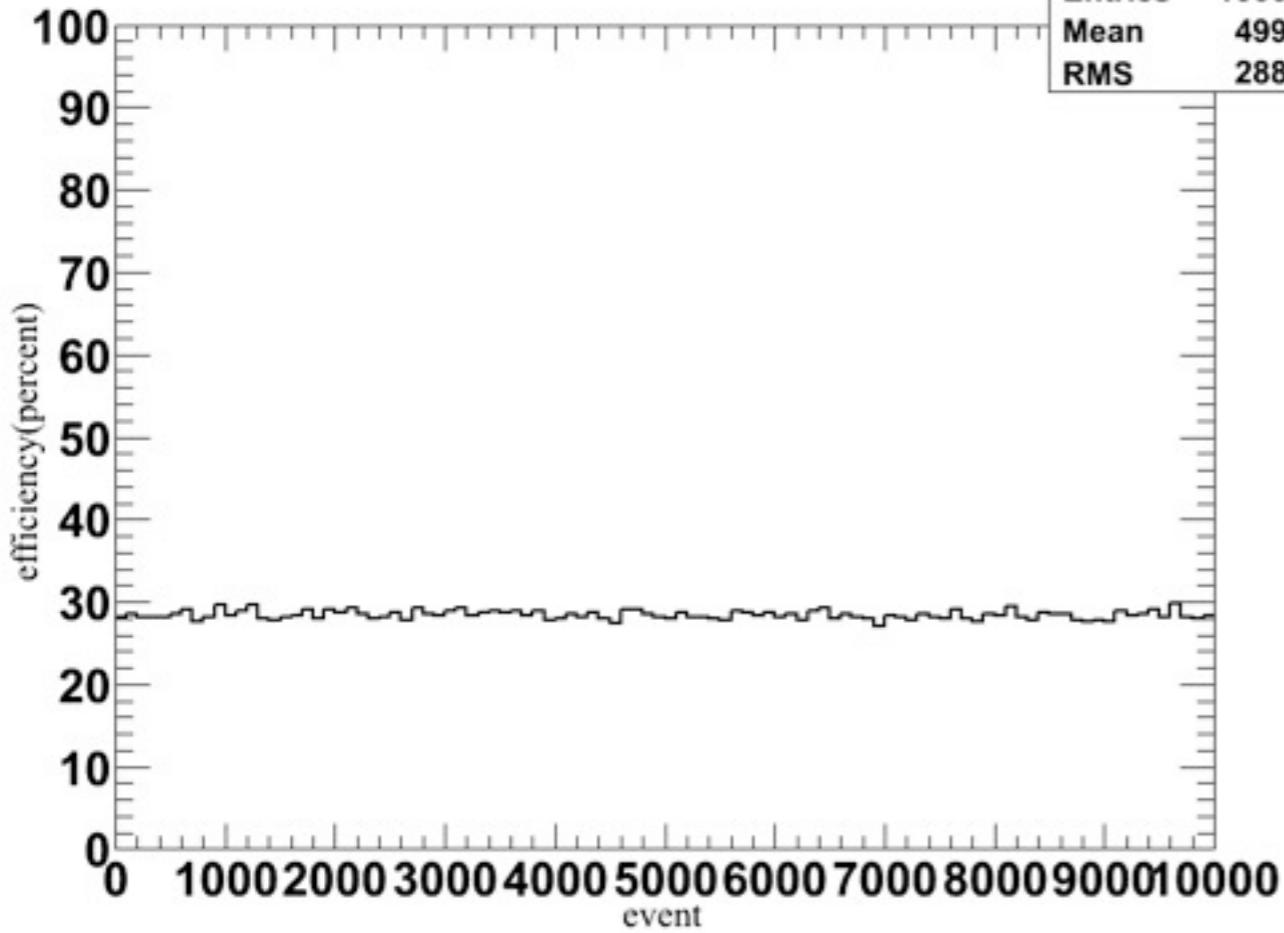
1. The number of **particles** generated at the primary vertex in IQMD data.
2. The number of **particles** which come in the detector angle.
3. The number of **particles** which is detected at the detector by simulation.

particles : neutrons or charged particles



Efficiency 3/I per event

efficiency for 2/1(charged)



charged particles

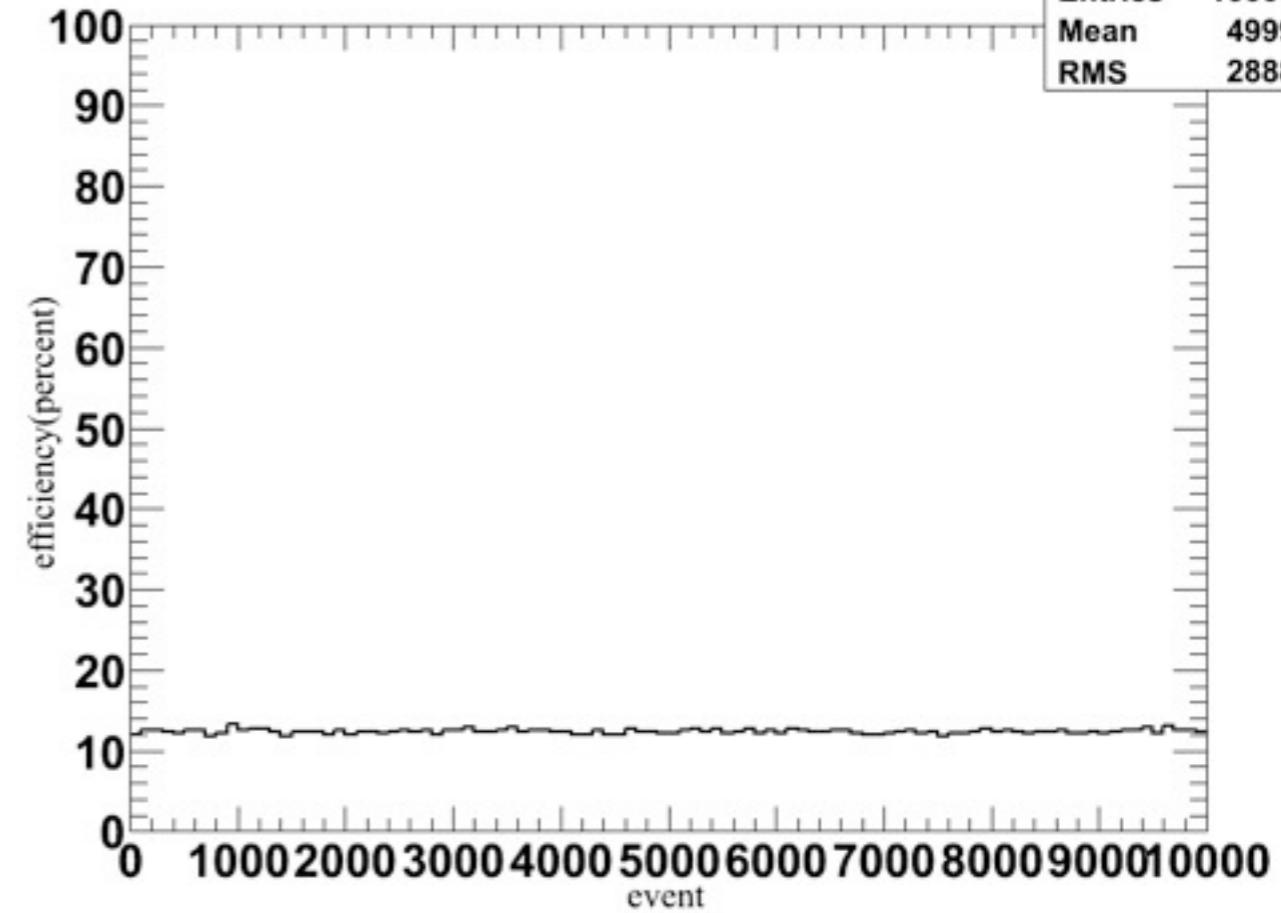
: except for muons and electrons

efficiency average

charged particles : approx. 29 %

neutrons : approx. 12 %

efficiency for 2/1(neutron)

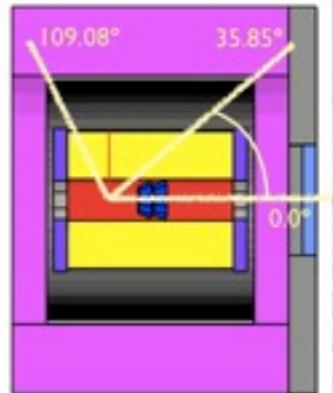


neutrons

1. The number of particles generated at the primary vertex in IQMD data.

2. The number of particles which come in the detector angle.

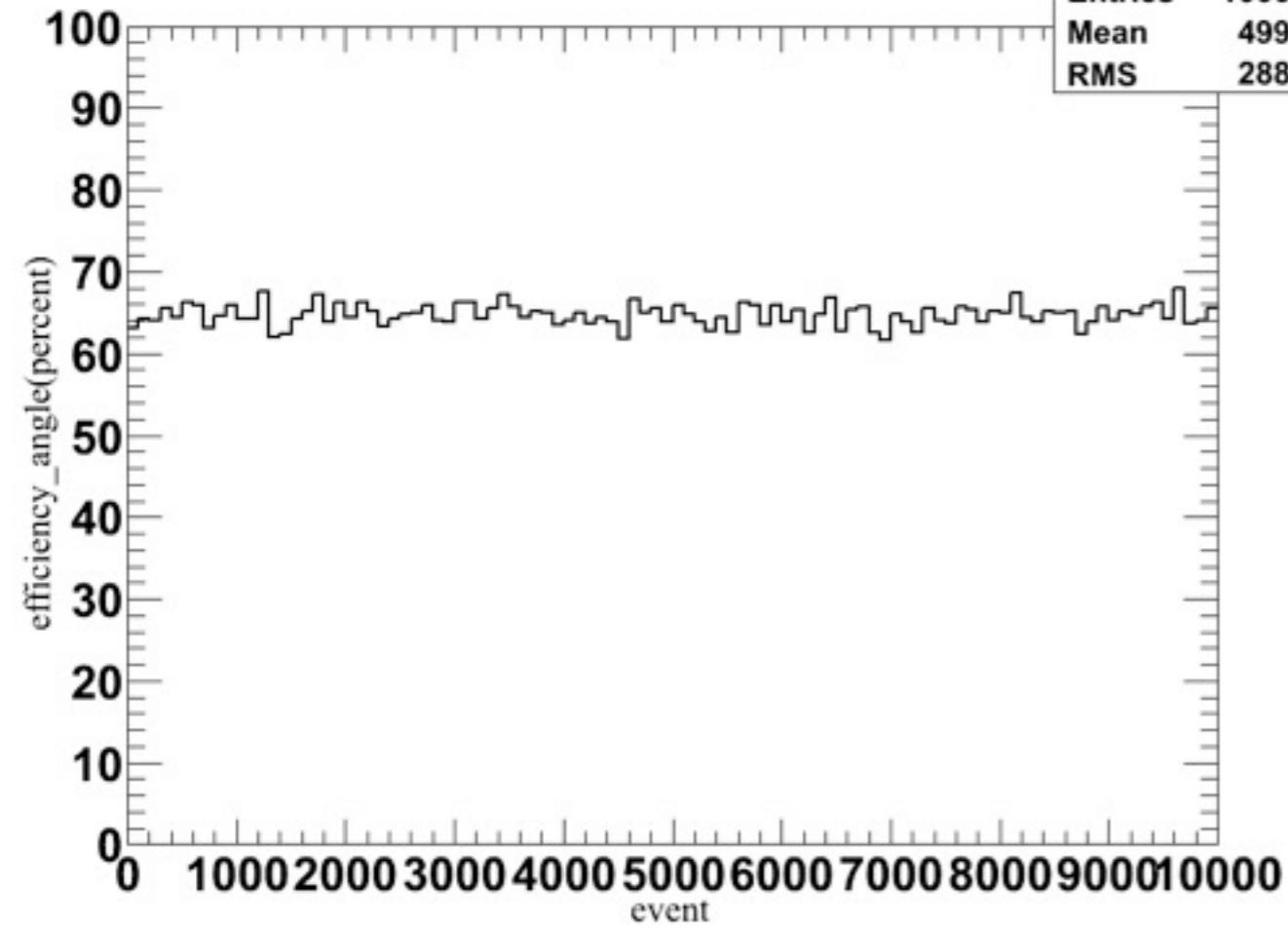
3. The number of particles which is detected at the detector by simulation.



particles : neutrons or charged particles

Efficiency 3/2 per event

efficiency for 3/2 (charged)



charged particles

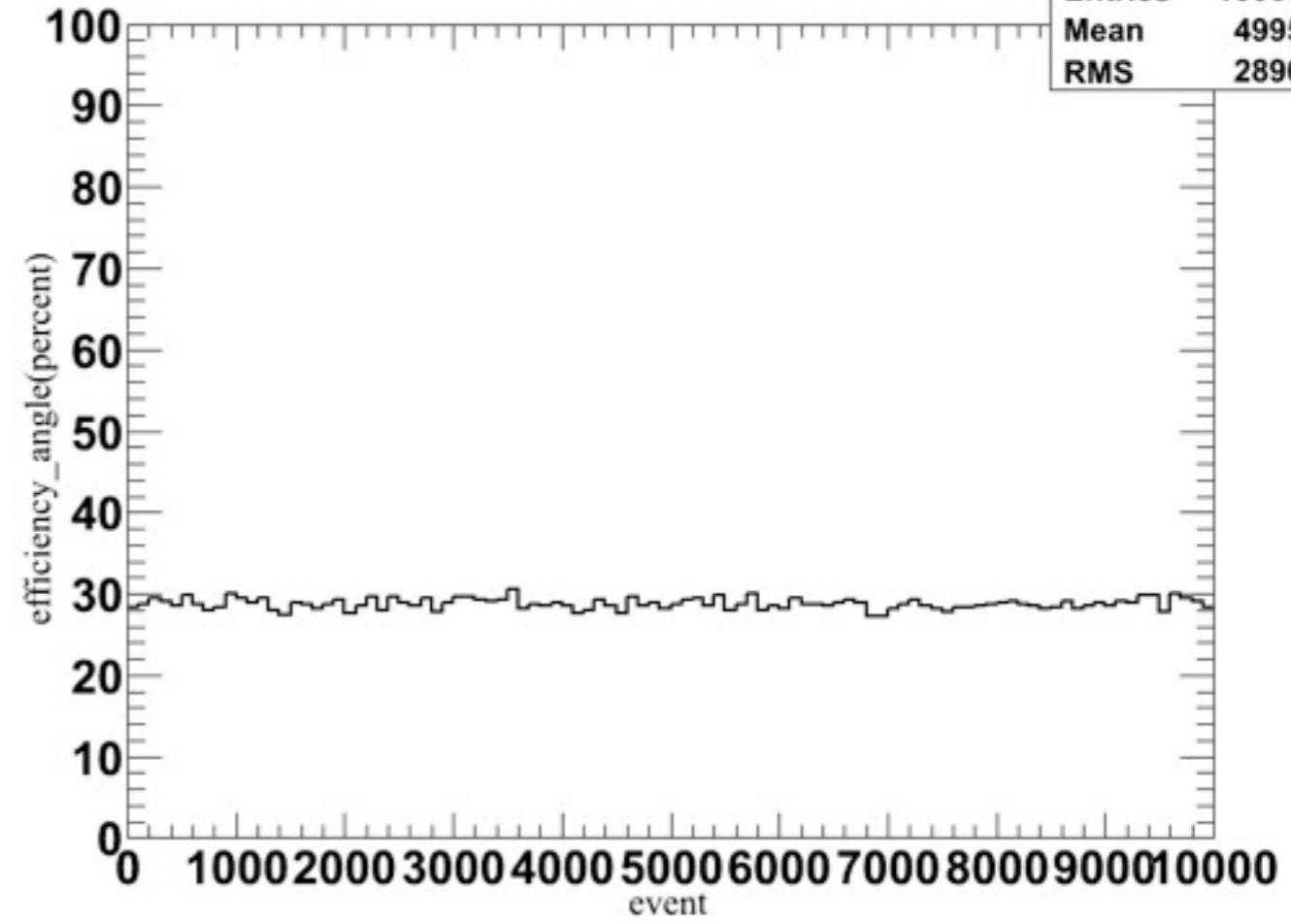
: except for muons and electrons

efficiency average
charged particles : approx. 65 %
neutrons : approx. 29 %

efficiency for 3/2

Entries	Mean	RMS
10000	4999	2889
10000	4995	2890
10000	4995	2890

efficiency for 3/2 (neutron)

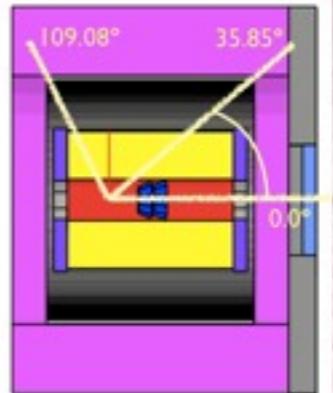


neutrons

1. The number of particles generated at the primary vertex in IQMD data.

2. The number of particles which come in the detector angle.

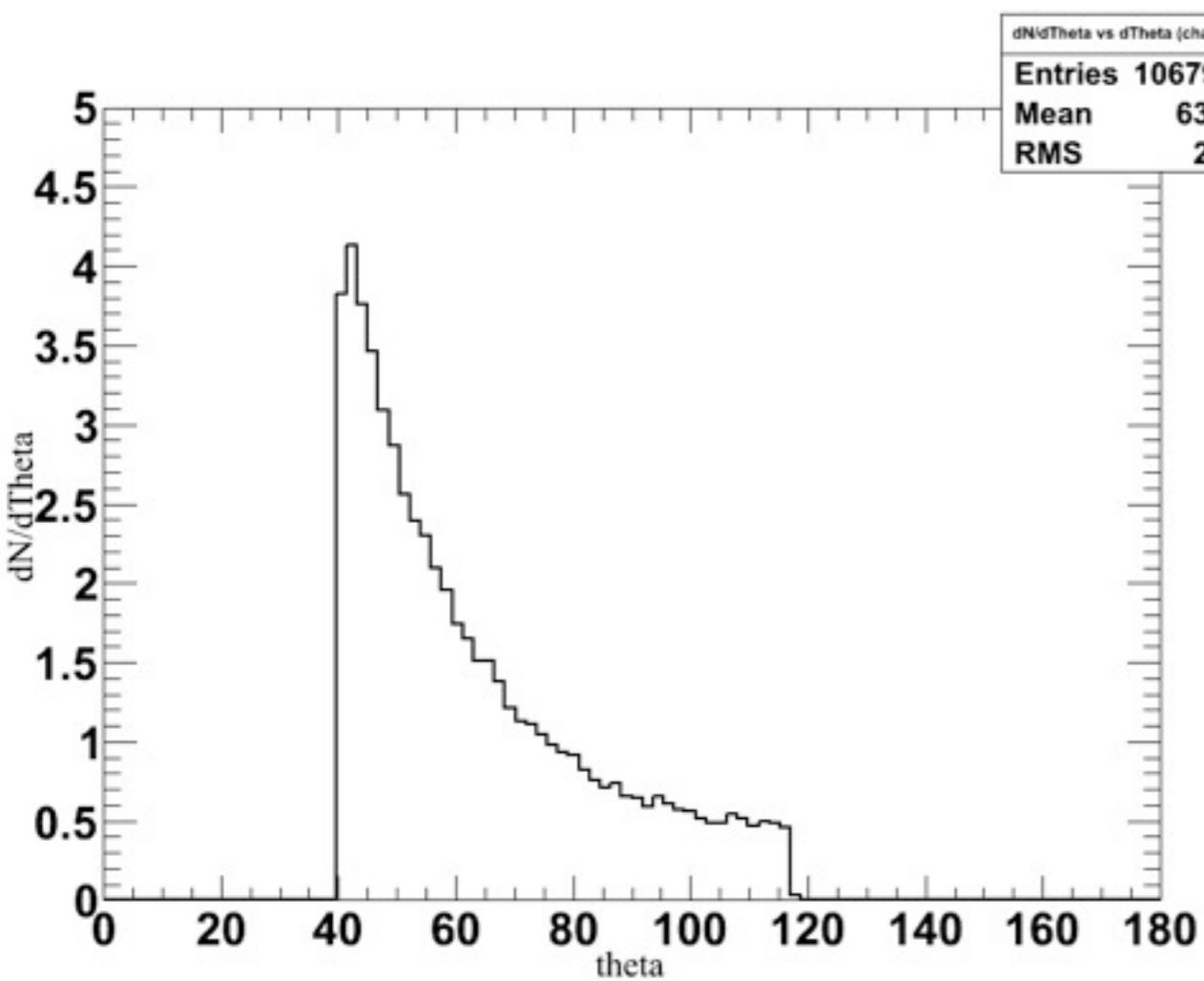
3. The number of particles which is detected at the detector by simulation.



particles : neutrons or charged particles

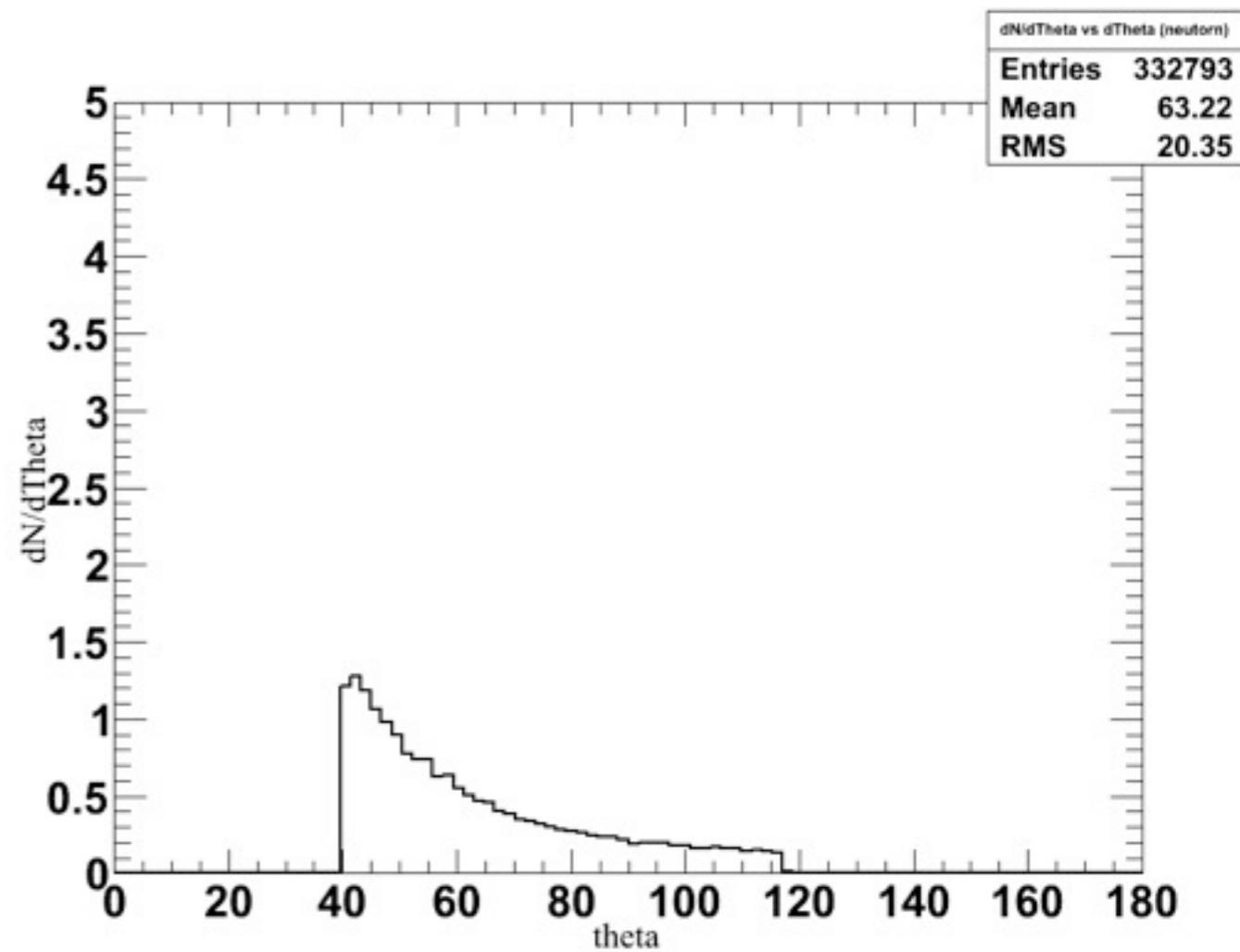
BACK UP

dN/dTheta

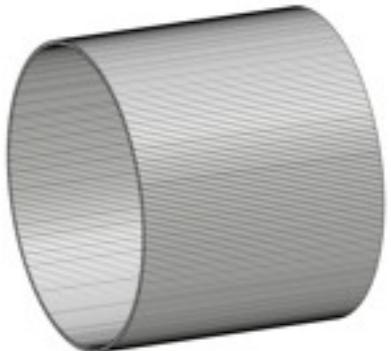


charged particles

: except for muons and electrons



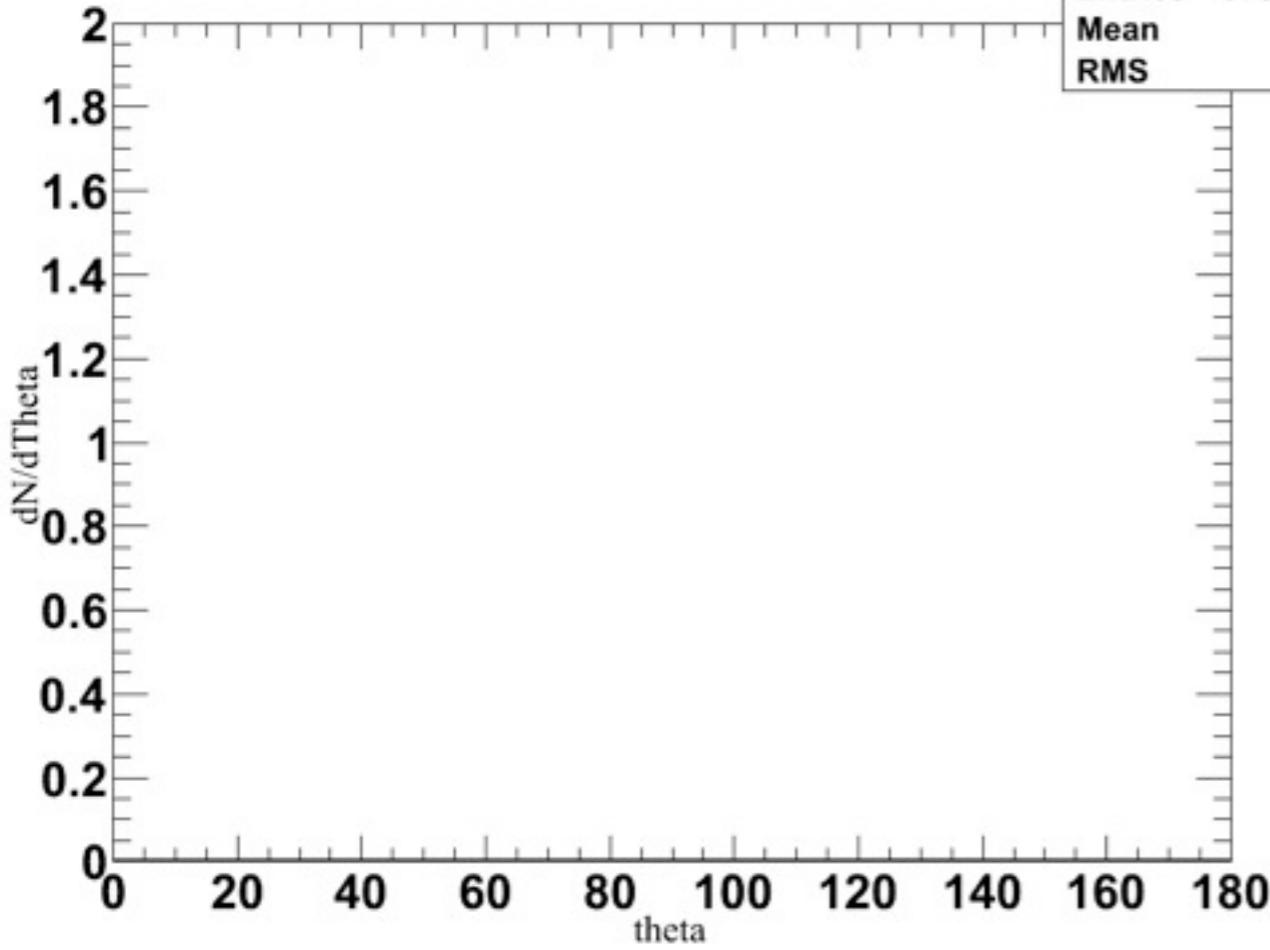
neutrons



Energy cut : 1 MeV 1 bin = 1 module

dN/dTheta

dN/dTheta vs dTheta (charged)

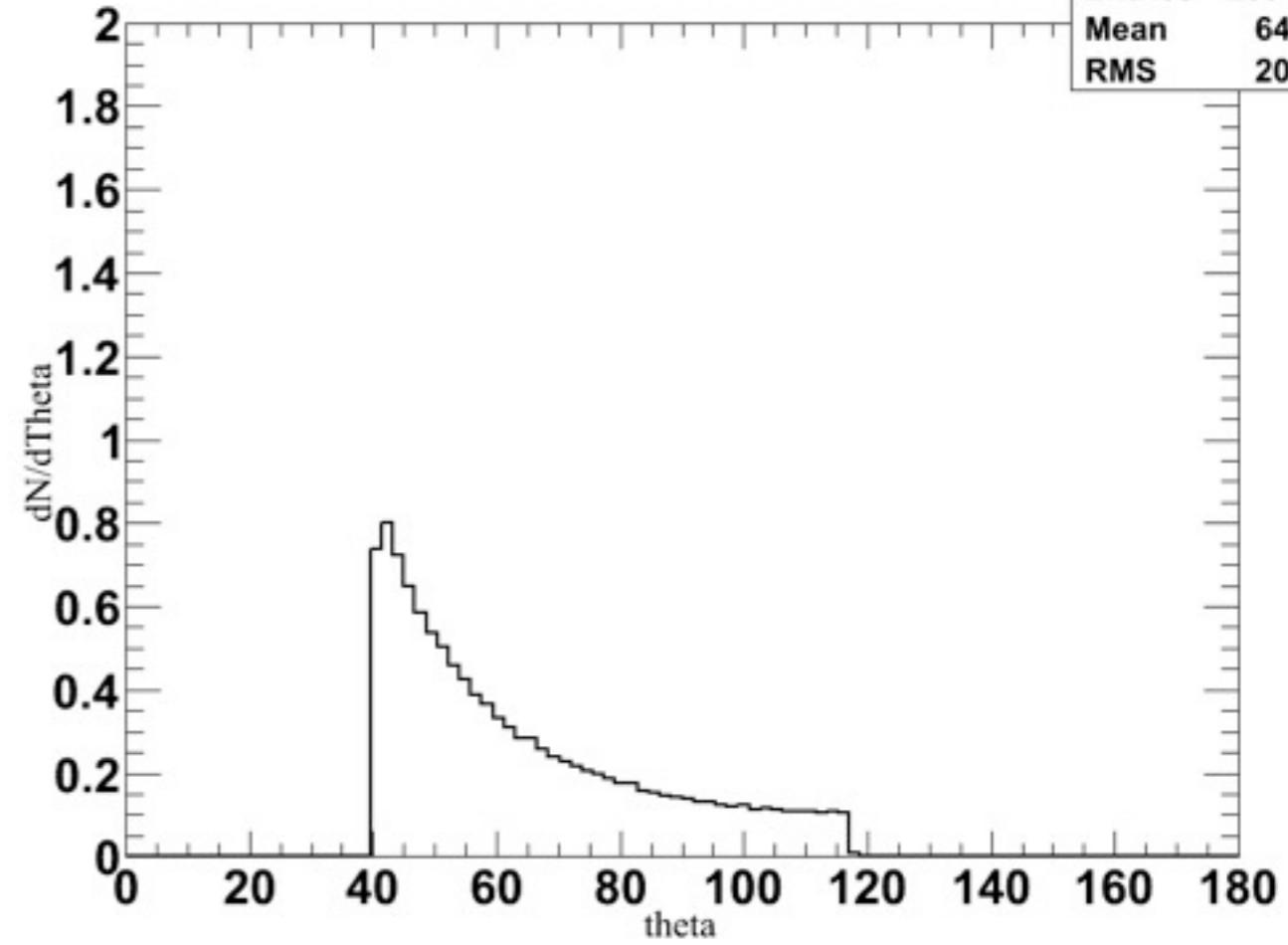


charged particles

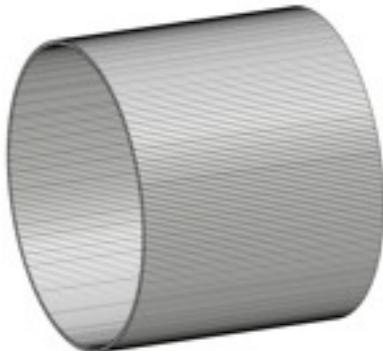
: except for muons and electrons

dN/dTheta vs dTheta (charged)

Entries 373603
Mean 0
RMS 0



neutrons



Energy cut : 1 MeV 1 bin = 1 module