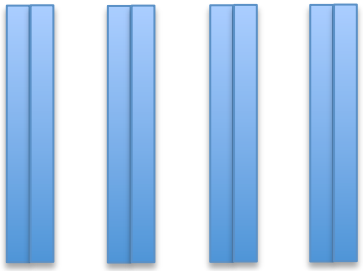
1. Geometry condition



- Detector structure

Number of layers : 8

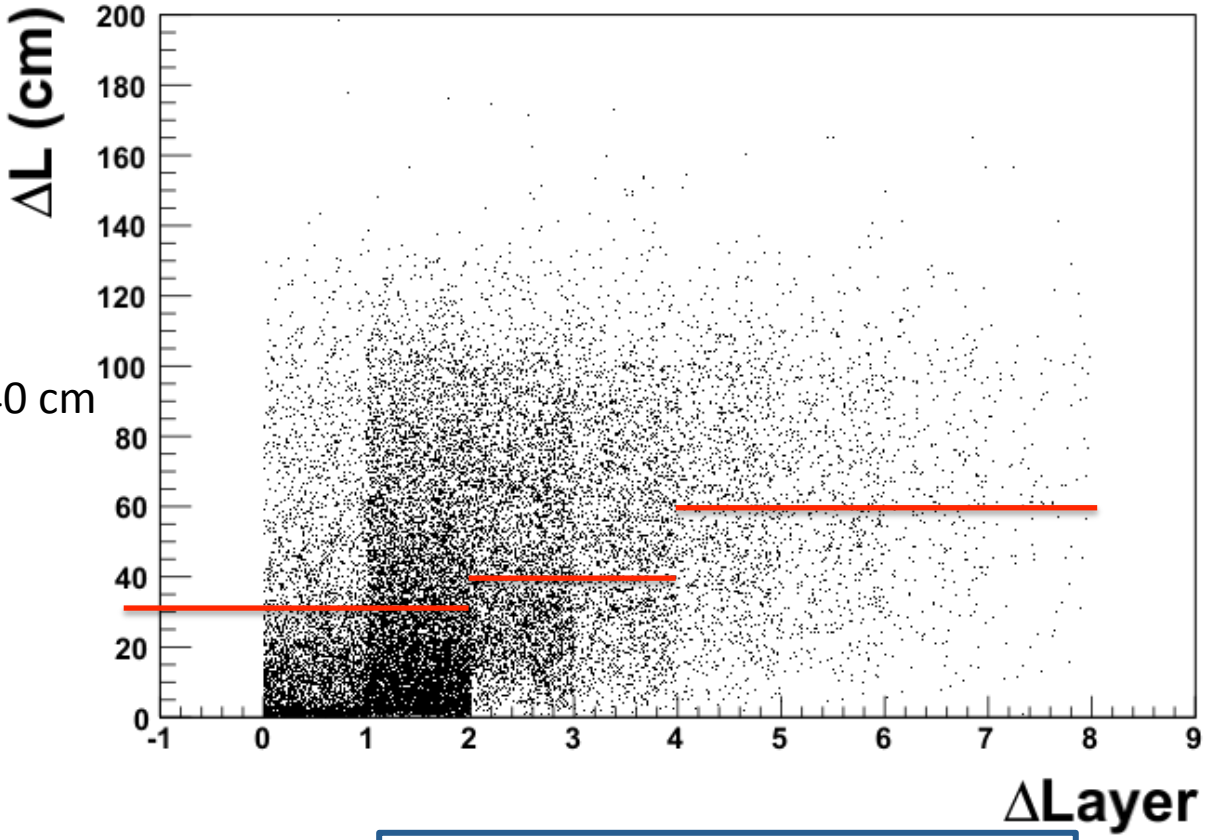
Gap thickness between stacks : 40 cm

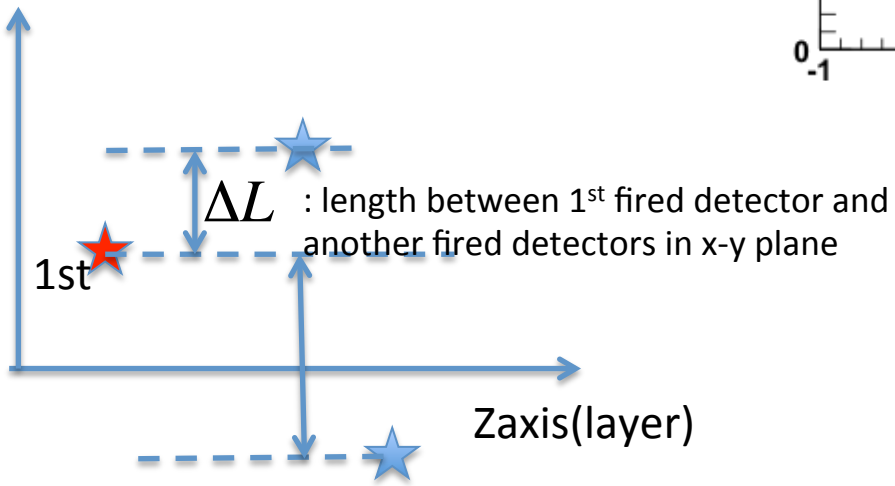
- Beam condition

300 MeV neutron

Number of events : 10000

Point beam with z direction





ΔL : length between 1st fired detector and another fired detectors in x-y plane

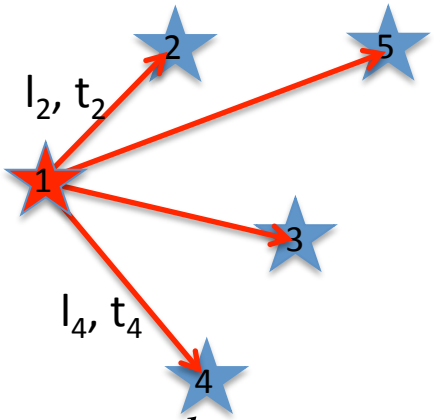
- Present geometry condition

$\Delta Layer$	0 or 1	: < 30 cm
	2 or 3	: < 40 cm
	4 or 5	: < 60 cm
	6 or 7	: < 60 cm

2. Beta condition

Scattered neutron has less kinetic energy than the initial kinetic energy

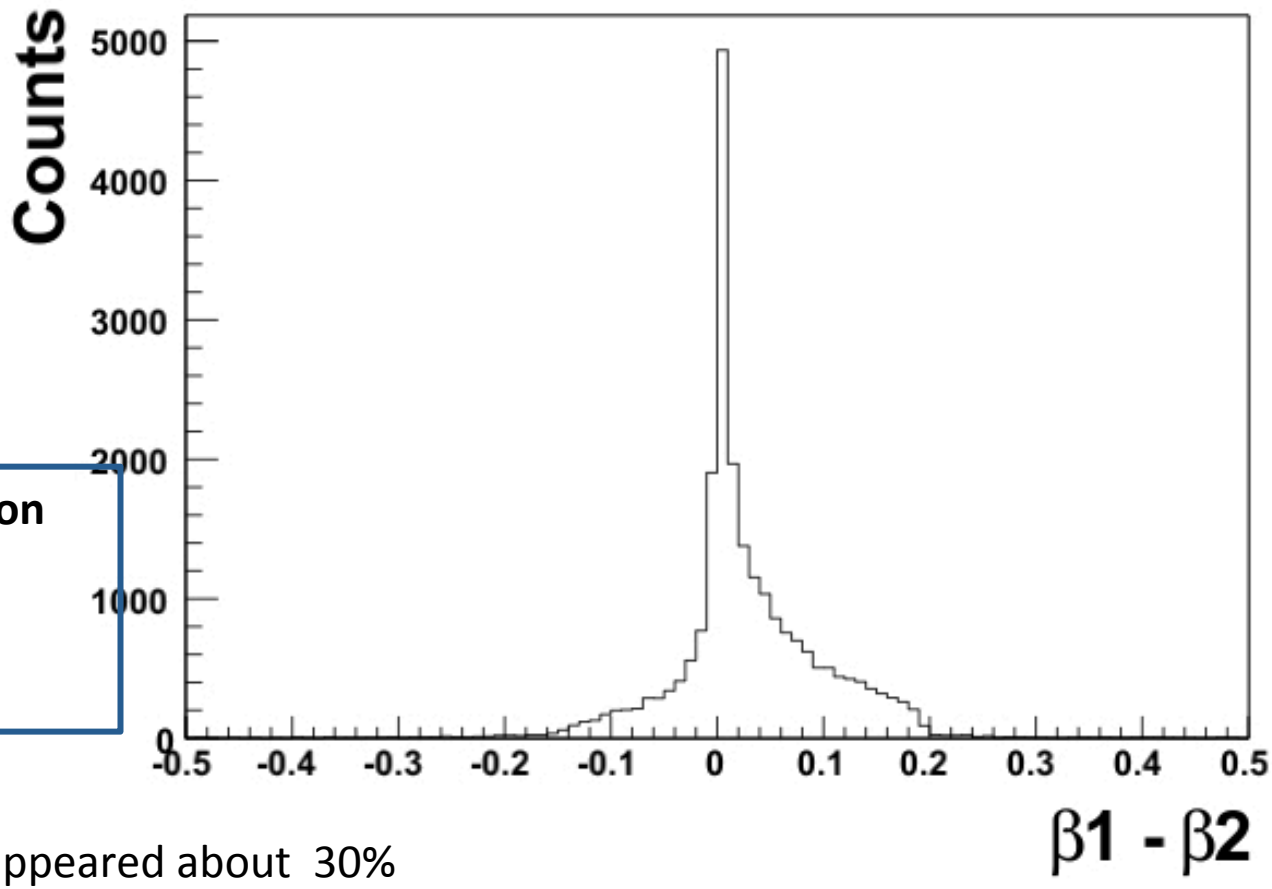
$$\therefore \beta_1 - \beta_2 > 0$$



$$\beta_n = \frac{l_n}{t_n}$$

- Present beta condition

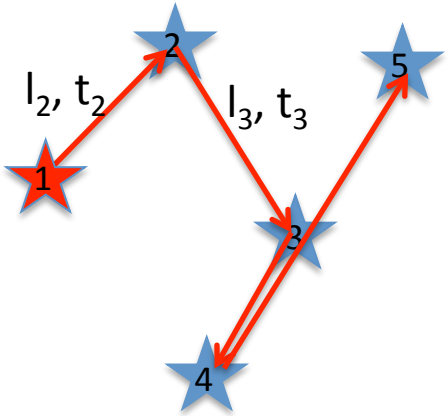
$$\beta_n > \beta_{n-1}$$



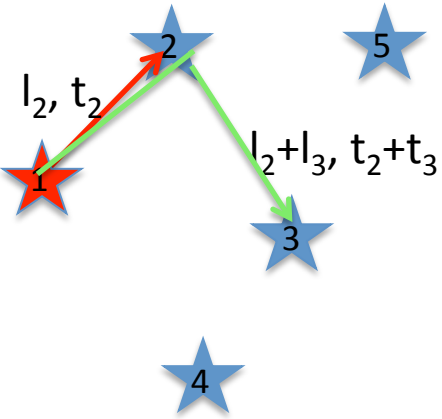
But, negative sign is appeared about 30%

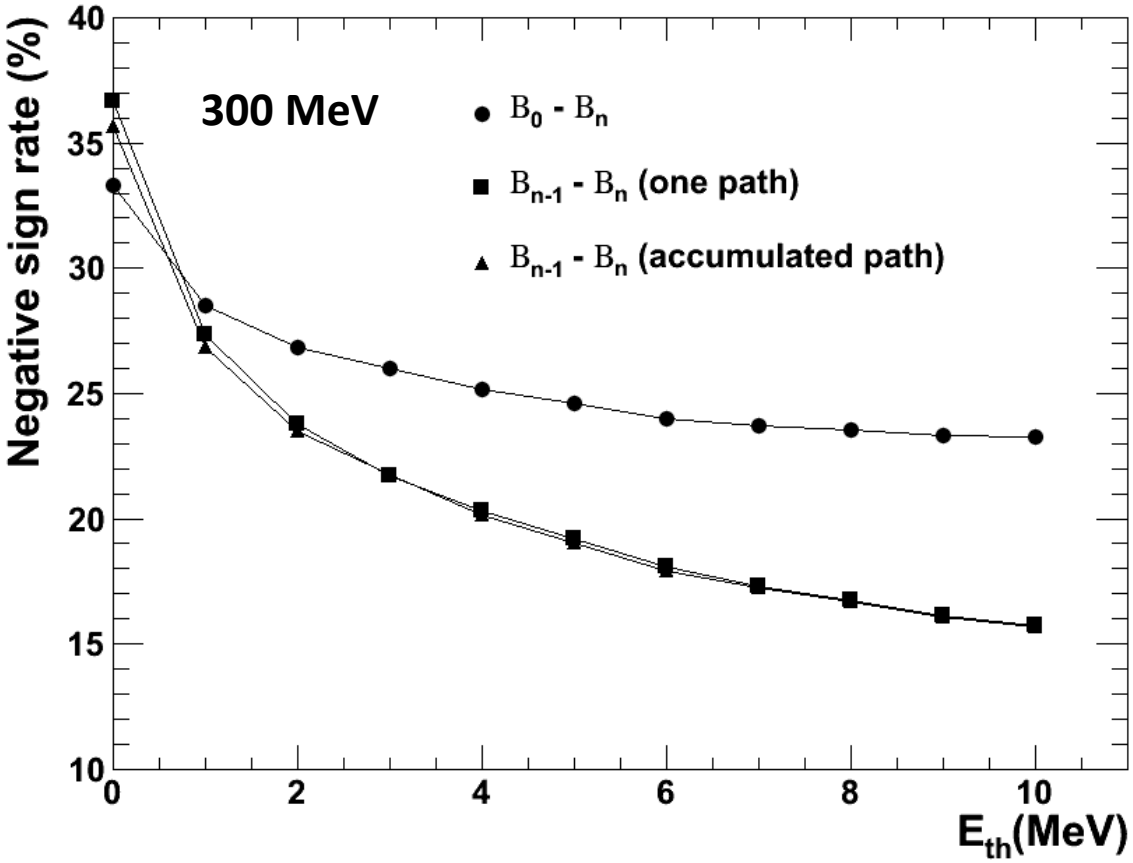
Different beta calculation comparison

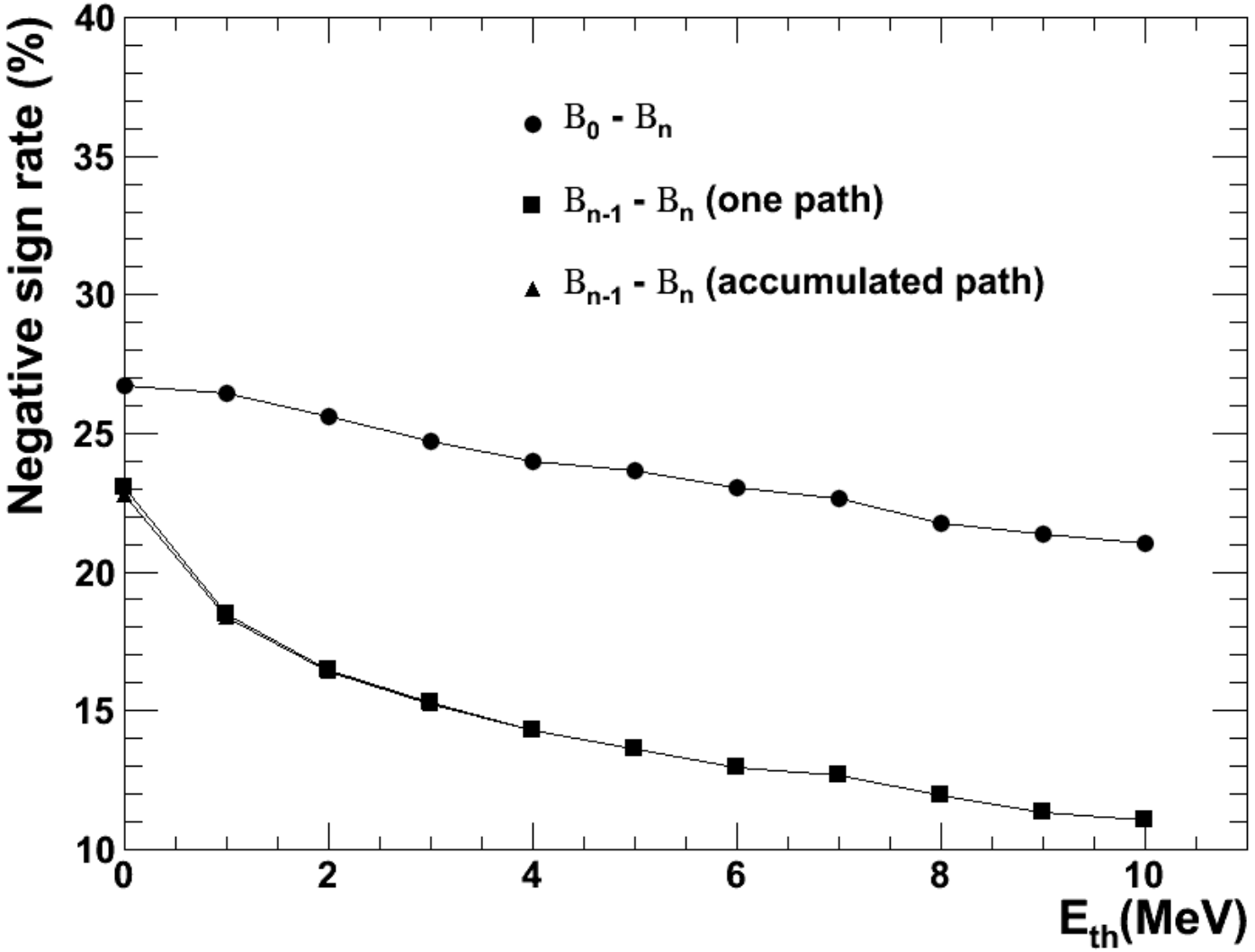
2. One path



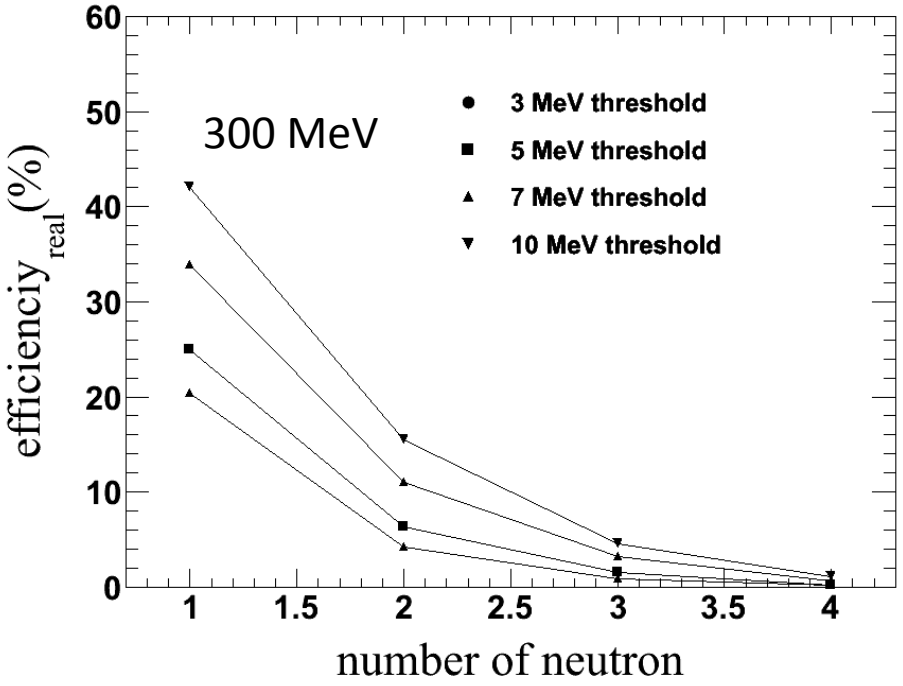
3. accumulated path



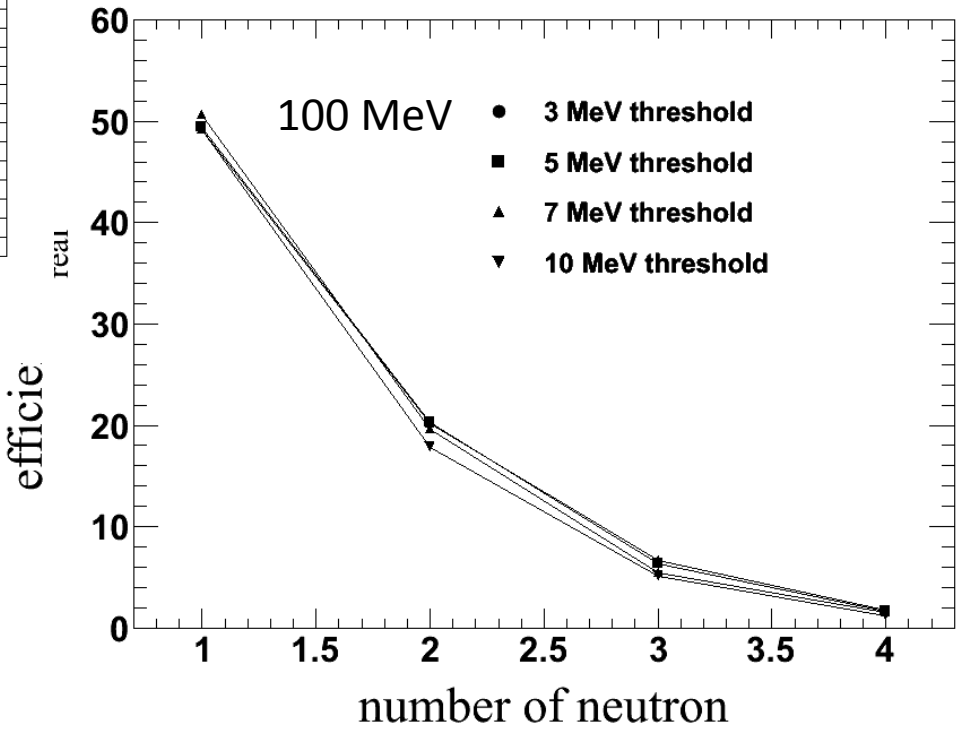



Negative sign rate (%)
40
35
30
25
20
15
10
0
2
4
6
8
10
E_{th}(MeV)
B_0 - B_n
B_{n-1} - B_n (one path)
B_{n-1} - B_n (accumulated path)

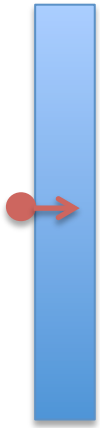
Efficiency



From Bumgun



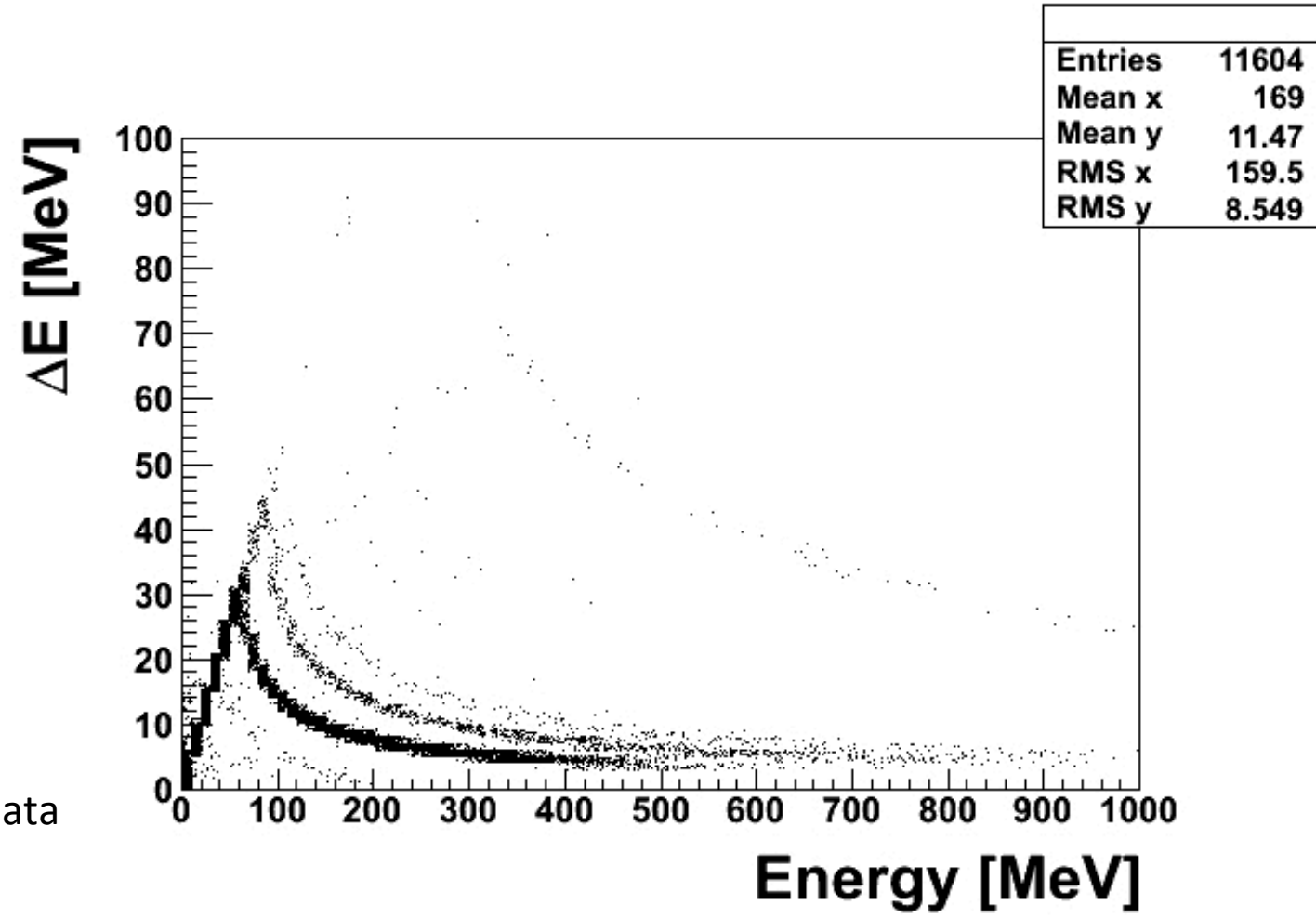
dE vs E



1 cm thick Veto

Generated particles:

Used IQMD 150 MeV data



IQMD data format

Track ID		mass	Px	Py	Pz
149	proton	0.93838	0.2541E+00	0.1848E+00	0.4730E-01
149	proton	0.93838	-.1274E+00	0.7279E-01	0.2785E+00
149	proton	0.93838	-.4120E-02	0.1213E+00	-.8370E-01
149	proton	0.93838	-.9018E-01	-.3403E-01	0.2419E-01
149	proton	0.93838	-.5386E-01	-.1205E-01	0.1068E-02
149	deuteron	1.87691	0.1678E-02	-.1976E+00	-.1839E+00
149	triton	2.81543	-.2770E+00	-.2763E+00	0.6098E+00
149	proton	0.93838	-.6790E-01	0.1430E+00	-.3746E-01
149	deuteron	1.87691	0.3799E-01	0.4349E-01	0.1398E+00
149	proton	0.93838	-.1344E+00	-.3677E-01	0.2322E+00
149	deuteron	1.87691	-.5356E-01	0.1373E-02	0.8583E-01
149	proton	0.93838	-.8347E-01	-.1314E+00	0.1089E+00
149	proton	0.93838	0.9140E-01	0.1314E+00	0.1475E+00
149	proton	0.93838	-.8591E-01	0.5570E-01	0.8774E-02
149	deuteron	1.87691	-.1619E+00	0.5951E-02	0.1860E+00
149	proton	0.93838	0.2884E-01	0.7782E-02	0.9354E-01
149	proton	0.93838	0.6638E-01	-.7126E-01	-.1145E+00
149	proton	0.93838	0.1668E+00	-.7477E-02	0.1706E+00
149	proton	0.93838	-.9934E-01	-.4654E-01	-.9140E-01
149	proton	0.93838	-.4959E-01	-.1118E+00	-.3746E-01
149	proton	0.93838	-.2579E-01	0.3815E-02	0.1012E+00
149	proton	0.93838	-.6424E-01	-.5341E-02	-.9140E-01
149	proton	0.93838	-.1787E+00	0.4623E-01	-.7599E-01
149	proton	0.93838	-.6821E-01	0.1491E+00	0.6271E-01
149	triton	2.81543	-.7980E-01	0.1366E+00	0.7813E-01
149	proton	0.93838	-.2289E-02	-.6821E-01	-.3746E-01