Status on SDT simulation

Ryuta

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cepc-all_3.0T_MDC_config1.bgeom   ×   +
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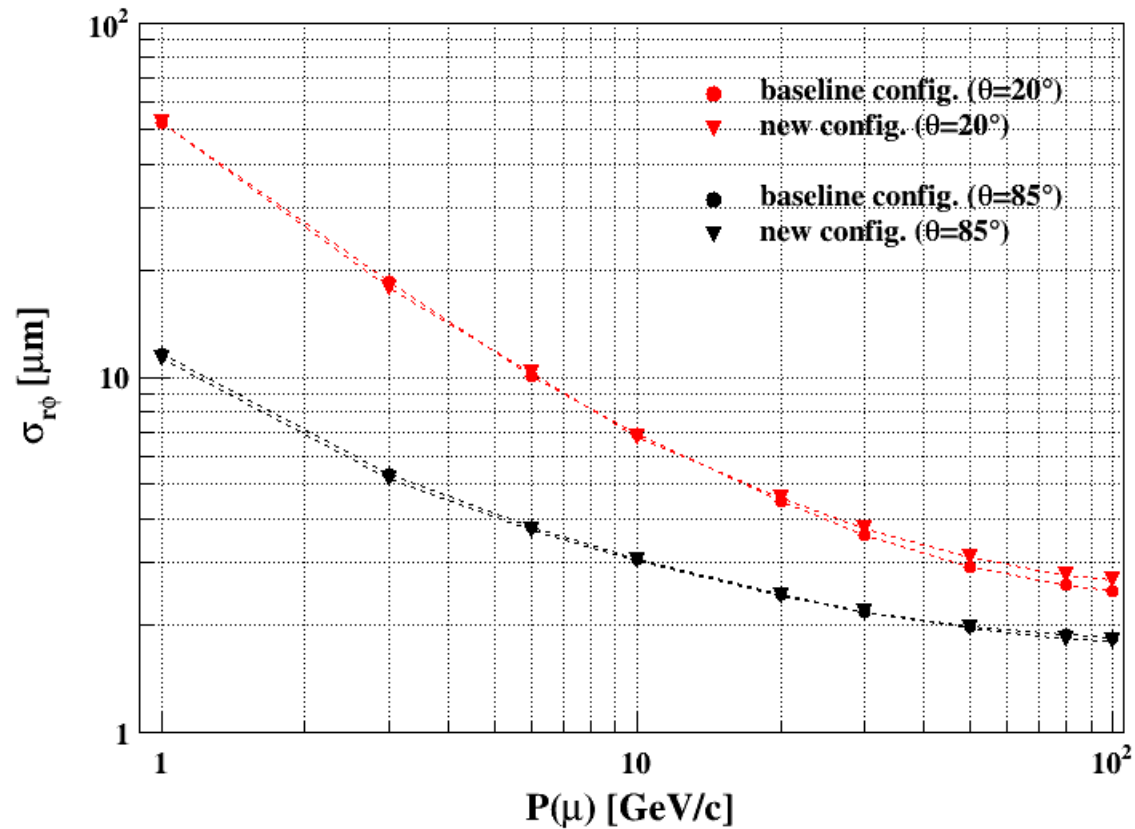| 28 | 28 Upper limit in z [mm]   : | 371.3, | 371.3, | 371.3, | 371.3, | 644, | 644, | 644, | 644, | 2350 |
29	29 Lower limit in z [mm] :	-371.3,	-371.3,	-371.3,	-371.3,	-644,	-644,	-644,	-644,	-2350
30	30 Efficiency RPhi :	0.99,	0,	0,	0,	0.99,	0,	0,	0,	0
31	31 Efficiency 2nd coord. (eg. z):	0,	0,	0,	0.99,	0,	0,	0,	0.99,	0
32	32 Stereo angle alpha [Rad] :	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180)
33	33 Thickness [rad. lengths] :	0.00213,	0.00468,	0.00468,	0.00213,	0.00213,	0.00468,	0.00468,	0.00213,	0.0009367
34	34 error distribution :	0
35	35 0 normal-sigma(RPhi) [1e-6m] :	7
36	36 sigma(z) [1e-6m] :	7
37	37 1 uniform-d(RPhi) [1e-6m] :	
38	38 d(z) [1e-6m] :	
39	39	
40	40 Time Projection Chamber (TPC)	
41	41 sigma^2=sigma0^2+sigma1^2*sin(beta)^2+Cdiff^2*6mm/h*sin(theta)*Ldrift[m]	
42	42 Number of layers :	133
43	43 Radii [mm] :	384,1716
44	44 Upper limit in z [mm] :	2225
45	45 Lower limit in z [mm] :	-2225
46	46 Efficiency RPhi :	1
47	47 Efficiency z :	1
48	48 Thickness [rad. lengths] :	0.00005194
49	49 sigma0(RPhi) [1e-6m] :	50
50	50 sigma1(RPhi) [1e-6m] :	900
51	51 Cdiff(RPhi) [1e-6m/sqrt(m)] :	25
52	52 sigma0(z) [1e-6m] :	400
53	53 sigma1(z) [1e-6m] :	0
54	54 Cdiff(z) [1e-6m/sqrt(m)] :	80
55	55	
56	56 Silicon External Tracker (SET)	
57	57	
58	58 Number of layers :	6
59	59 Description (optional) :	TPC outer wall	--------------External Tracker---------------------------------------	
60	60 Names of the layers (opt.) :	XTPCW2,	SET1,	XSET1,	XSET2,	SET2,	SET3
61	61 Radii [mm] :	1808,	1810.9,	1811.1,	1812.4,	1813.4,	1847.4
62	62 Upper limit in z [mm] :	2350,	2300,	2300,	2300,	2300,	2350
63	63 Lower limit in z [mm] :	-2350,	-2300,	-2300,	-2300,	-2300,	-2350
64	64 Efficiency RPhi :	0,	0.99,	0,	0,	0,	0
65	65 Efficiency 2nd coord. (eg. z):	0,	0,	0,	0,	0.99,	0
66	66 Stereo angle alpha [Rad] :	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	7*(pi/180),	90*(pi/180)
67	67 Thickness [rad. lengths] :	0.009367,	0.00213,	0.00468,	0.00468,	0.00213,	0
68	68 error distribution :	0
69	69 0 normal-sigma(RPhi) [1e-6m] :	7,	7,	7,	7,	7,	7
70	70 sigma(z) [1e-6m] :	7,	7,	7,	7,	7,	7

change the thickness

change the number of layers,
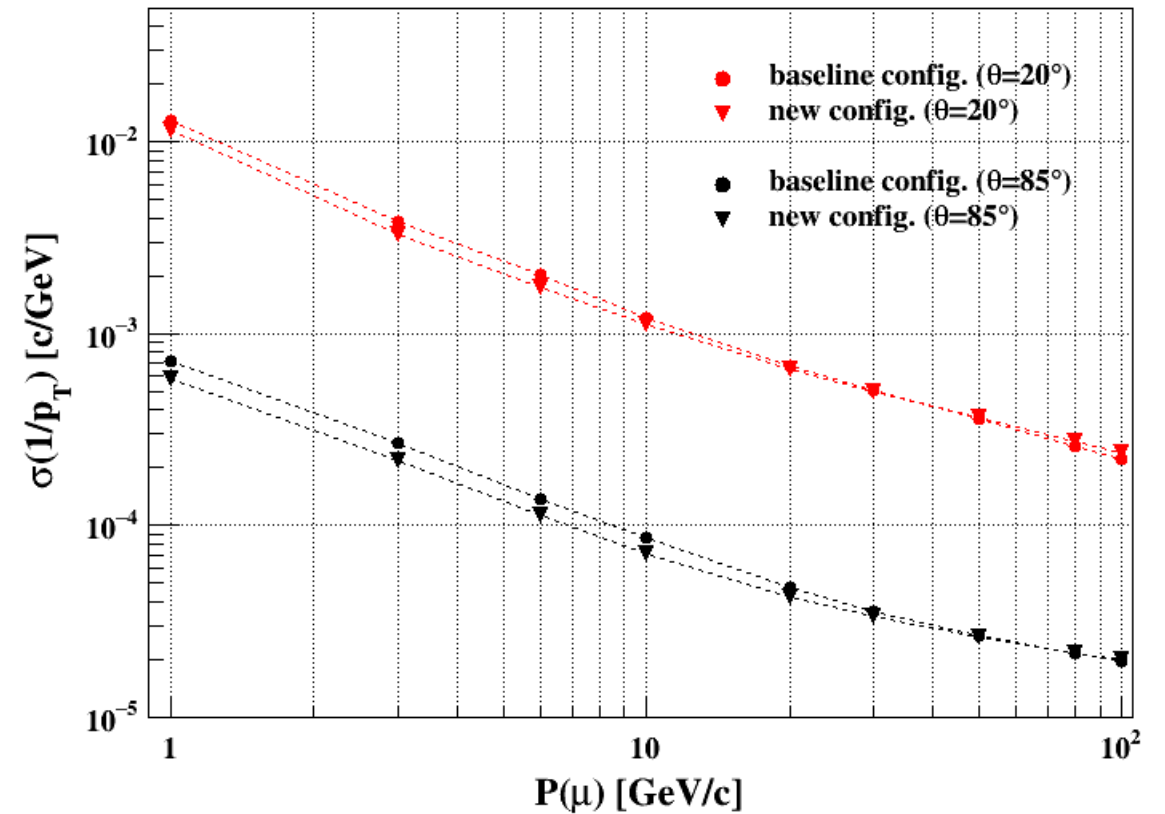(1716-384mm)/10mm ~ 133 cells

0.2 mm -> 2 mm

UTF-8

2

Comparison of resolutions

Changes: (from baseline config.) TPC → "MDC"

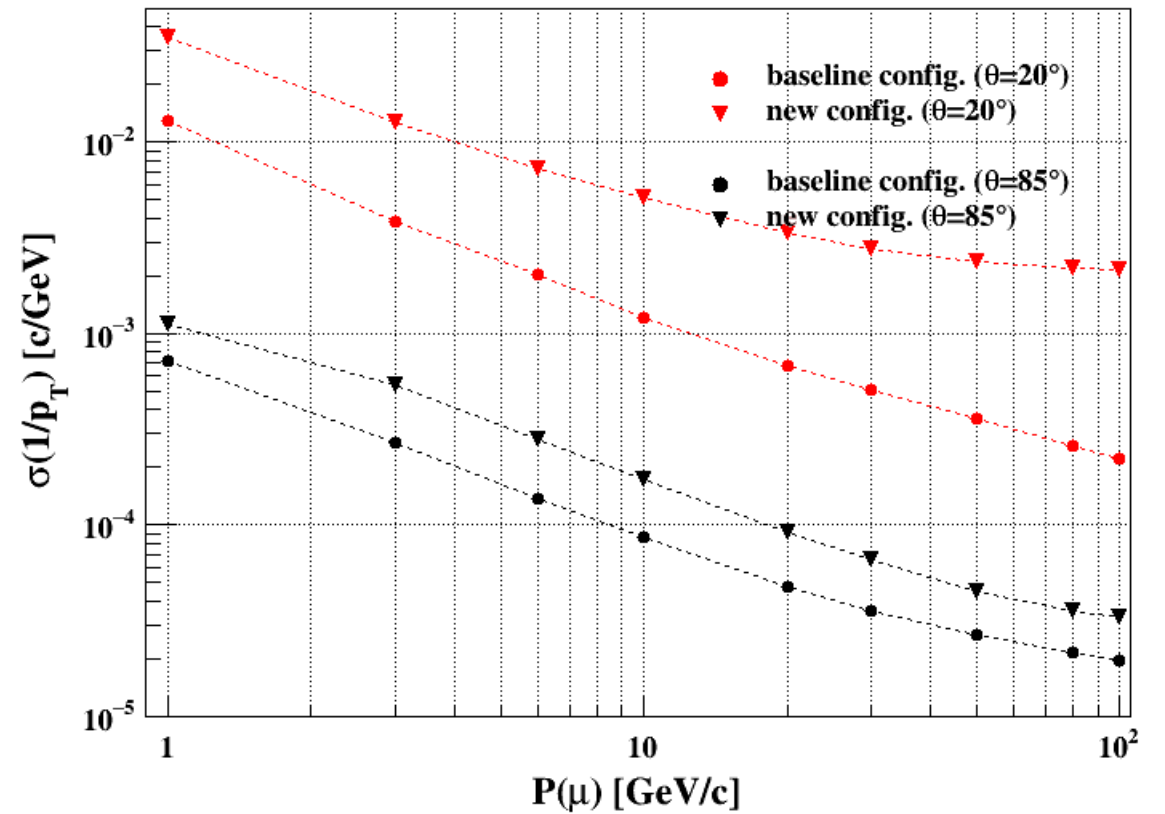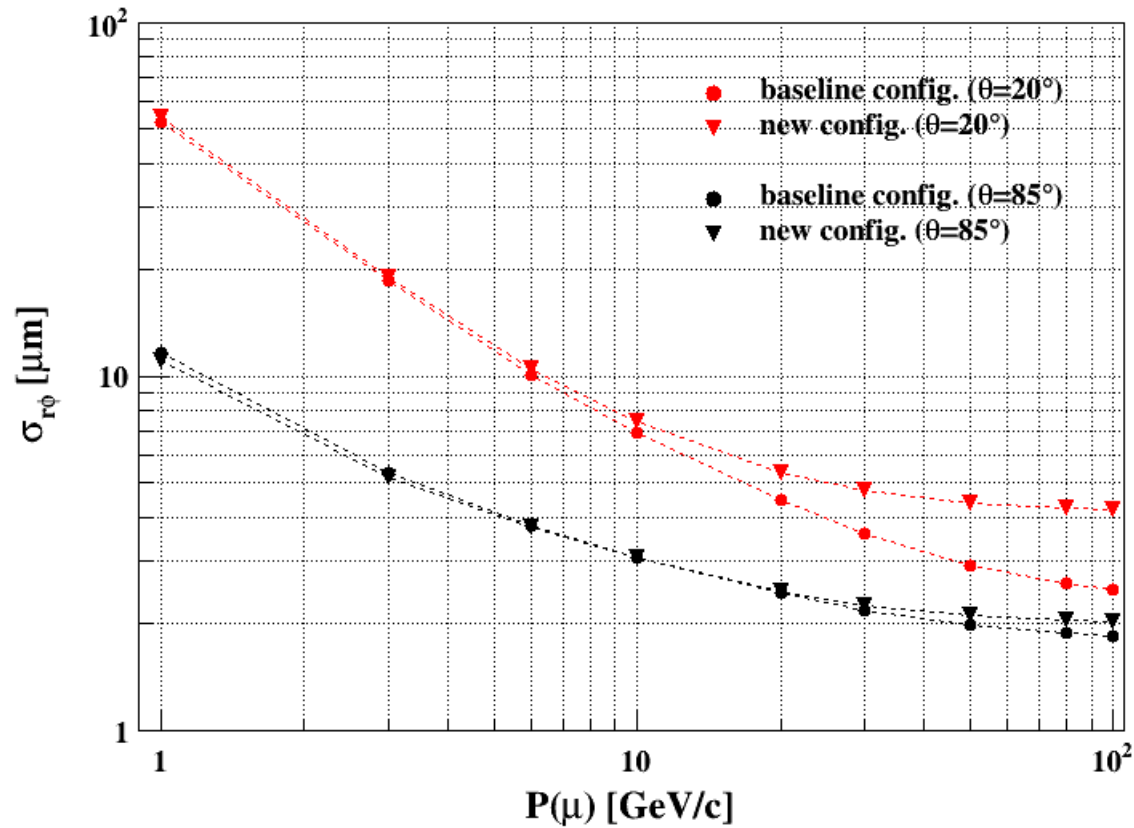update: outer shell thickness of the "MDC" is set to 2mm（previous one was 0.2 mm）

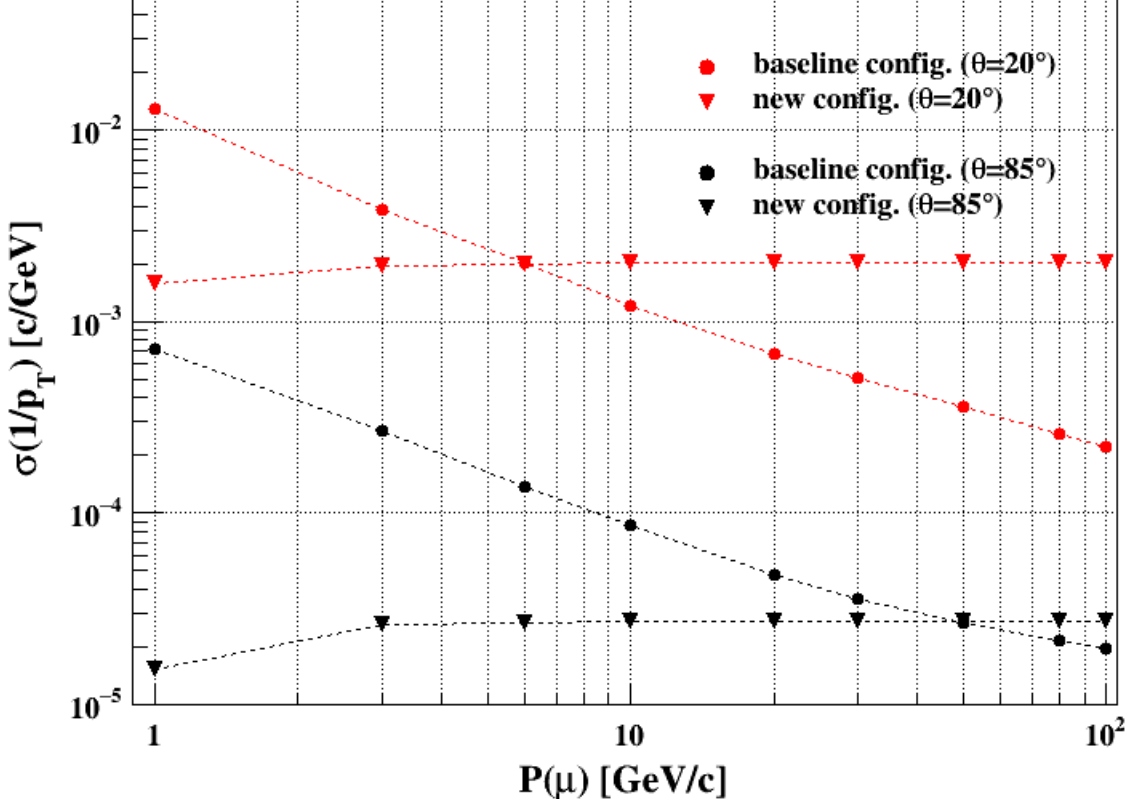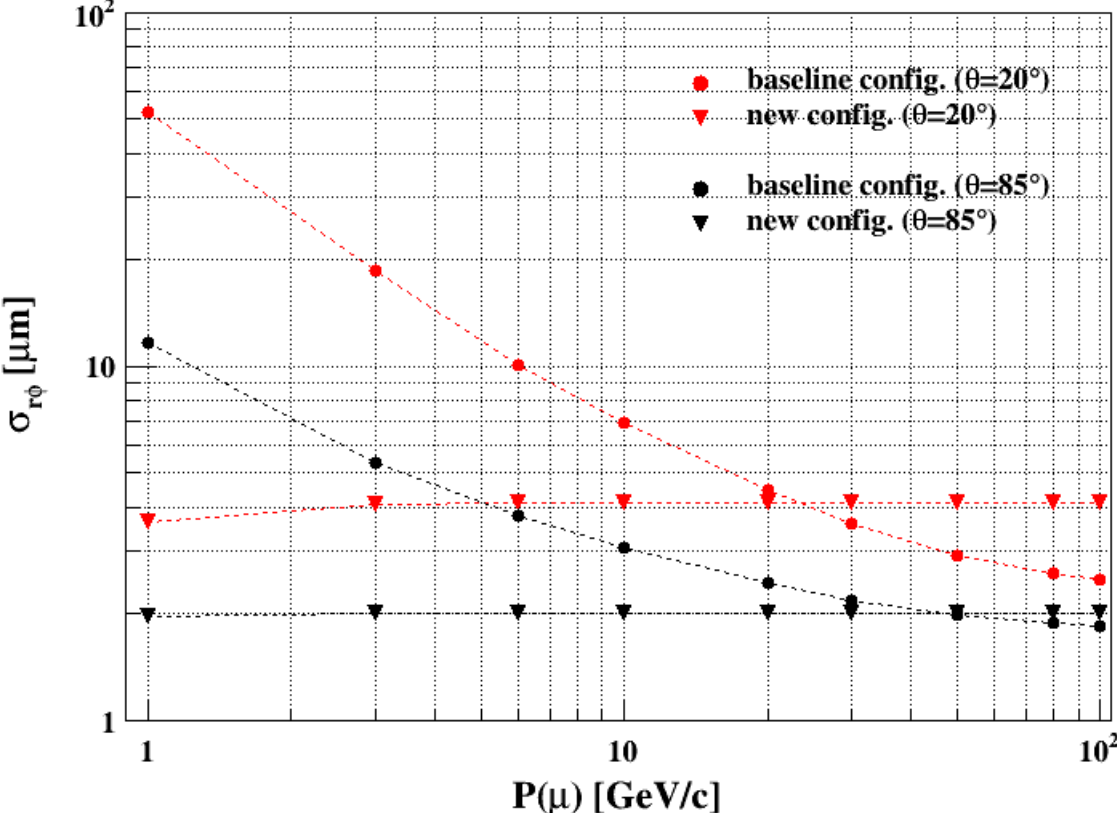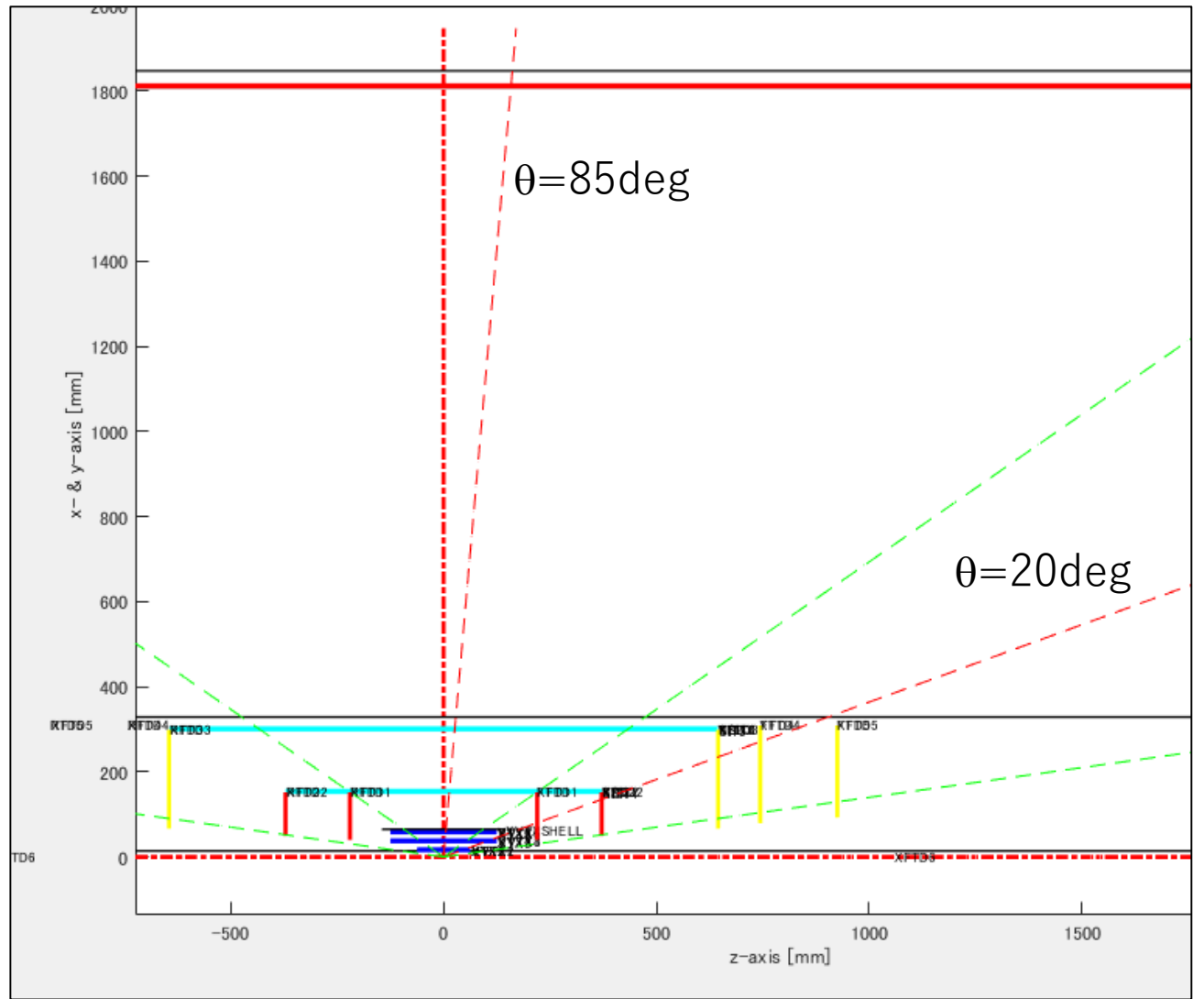**Transverse impact parameter resolution**

Momentum resolution

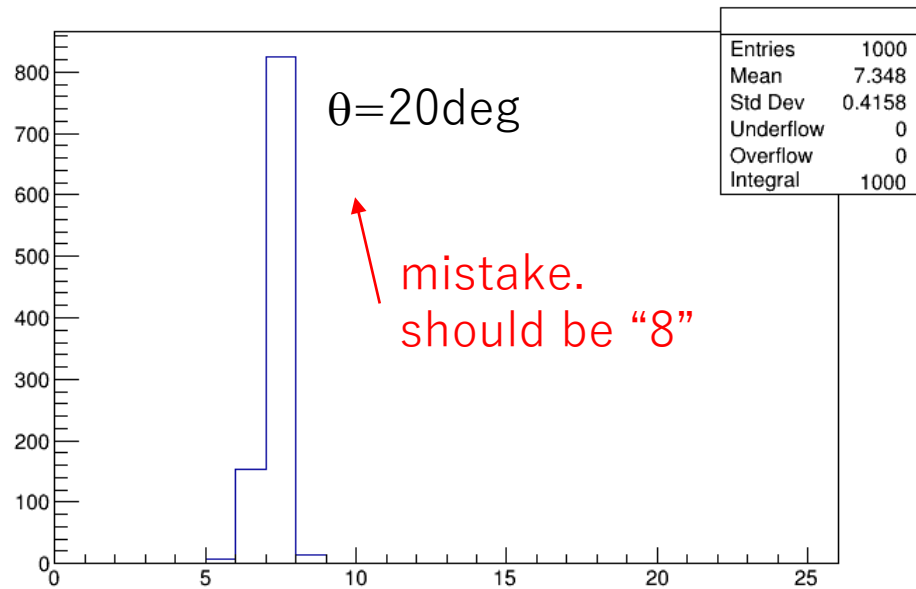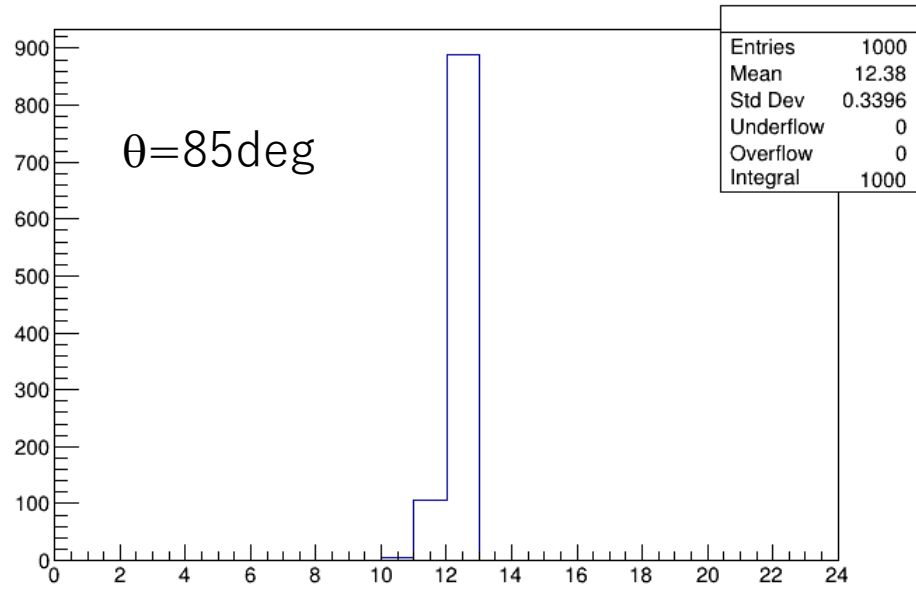# Ref: （v0.3）removing TPC（and its wall）

Ref: （v0.3）removing TPC + setting all of material budget as 0

update： material budget for forward trackers are set as 0（it was not changed）

θ=85deg

θ=85deg

θ=20deg

θ=20deg

mistake.
should be "8"

Ref: Nhit for "MDC" config.

θ=85deg

Entries	1000
Mean	145.4
Std Dev	0.332
Underflow	0
Overflow	0
Integral	1000

θ=20deg

Entries	1000
Mean	35.76
Std Dev	0.7499
Underflow	0
Overflow	0
Integral	1000