Study of $e^+e^- \rightarrow K^+K^- K^+K^-$

(R-Scan Data: √s=2.0GeV~3.08GeV)

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Event selection

- ## Good Charged Track:

  $|V_z| < 10.0$ && $|V_r| < 1.0$ && $|\cos\theta| < 0.93$;

  $N_{Good} == 3 || 4$; (To improve detection efficiency: Missing one Kaon.)

- ## PID with dE/dx and TOF:

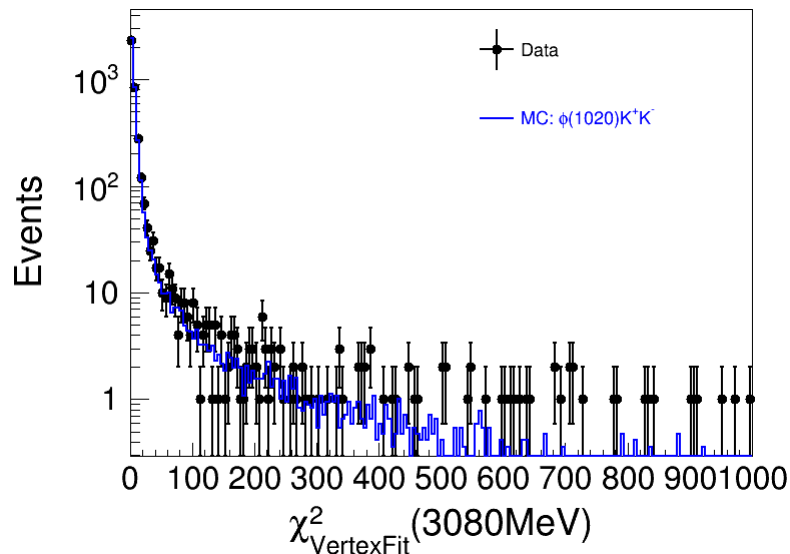 Kaon: prob_K>prob_p && prob_K>prob_π;

  At least three Kaons are indentified:

  $N(K^+) = N(K^-) = 2$; or $N(K^+) = 2$ && $N(K^-) = 1$; or $N(K^+) = 1$ && $N(K^-) = 2$;
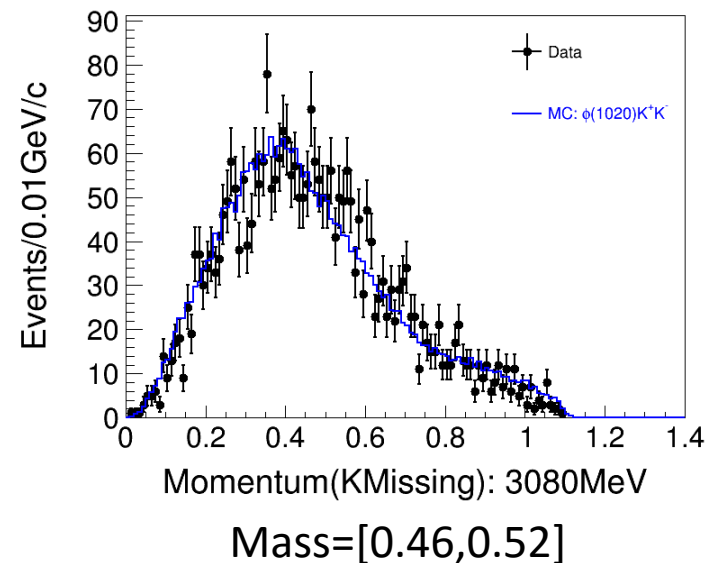
- ## Vertex fit ($K^+K^-K^\pm$).

@3080MeV: L=126.185pb⁻¹

(1) $\chi^2_{\text{vertexfit}}(K^+K^-K^+K^-)$ distribution;

(2) K_Missing Fitting :
   Signal: MC⊗ Gaussian;
   Background: Polynominal;

   N=3404.6±80.1

Mass=[0.46,0.52]
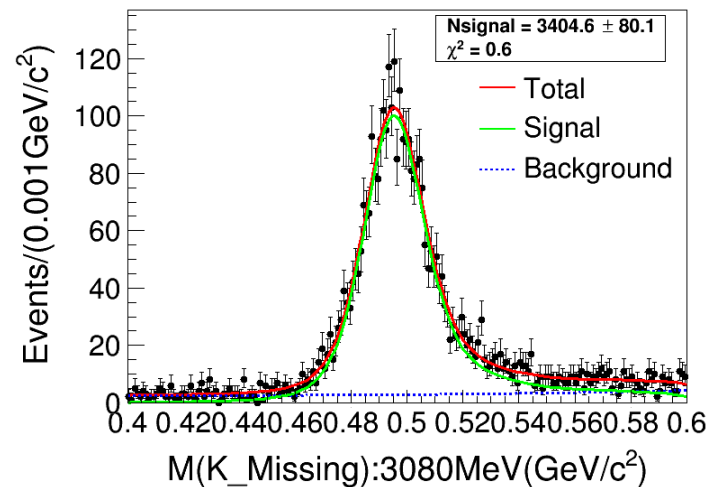
@3080MeV:MC

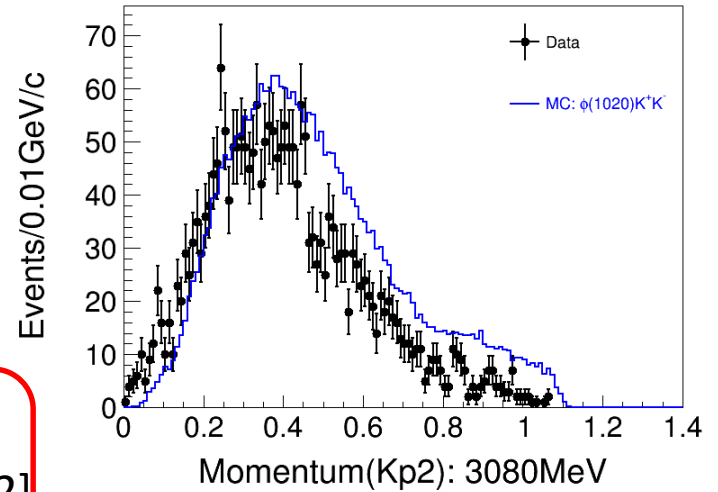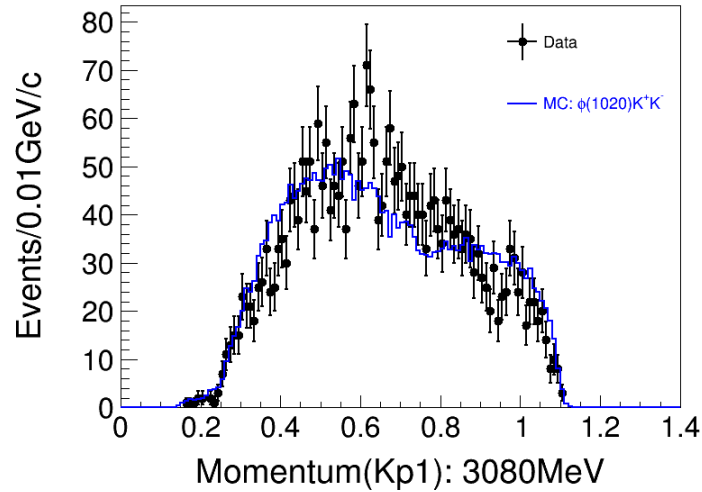
Mass=[0.46,0.52]

@2125MeV: L=108.49pb^{-1}
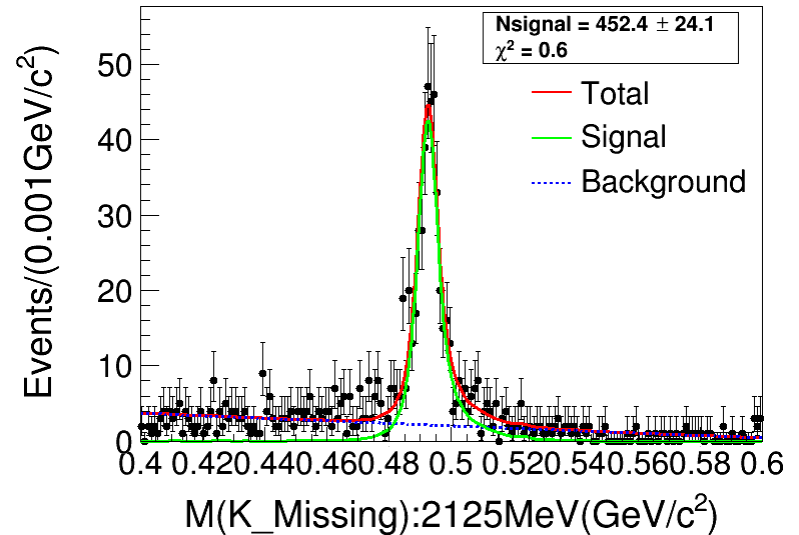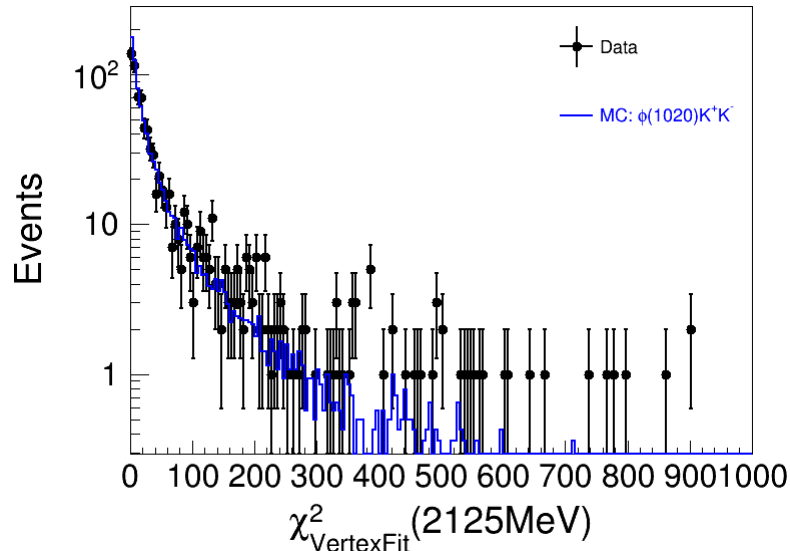
(1) $\chi^2_{\text{vertexfit}}(K^+K^-K^+K^-)$ distribution;

(2) K_Missing Fitting :
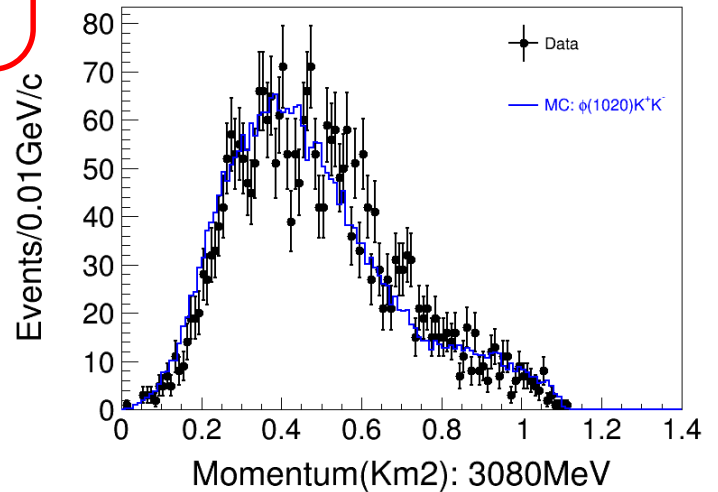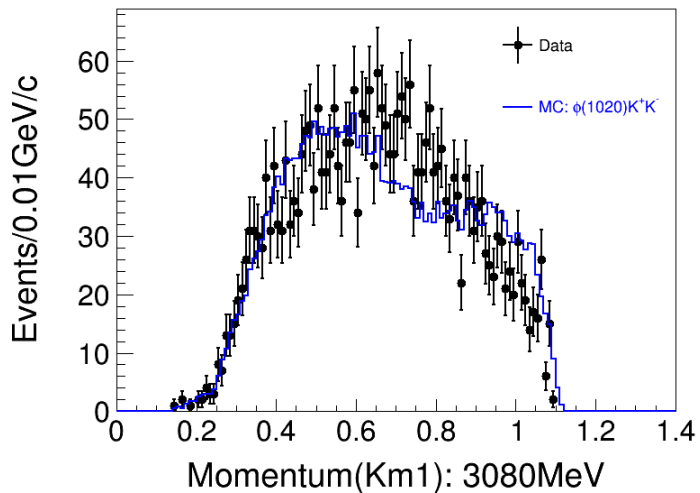   Signal: MC $\otimes$ Gaussian;
   Background: Polynominal;

   N=452.4 $\pm$ 24.1

@2125MeV :Momentum
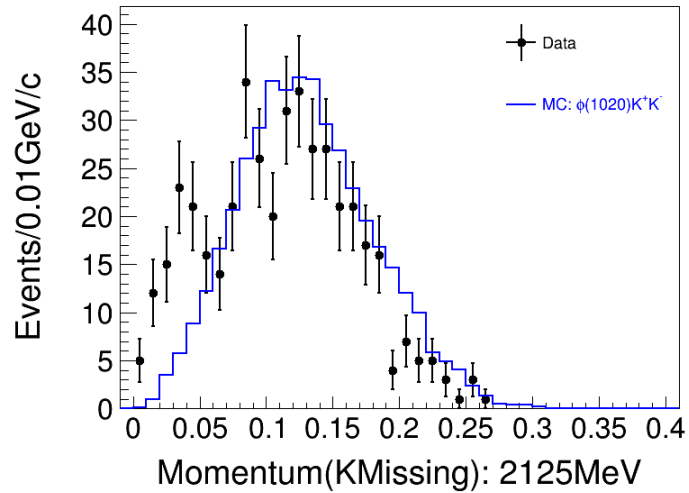
Backup

Plots:KKKK_MC@3080MeV

Three and four tracks between PID and Vertex fitting.

Three tracks after Vertex fitting.

Plots:PhiKK_MC@3080MeV

Three and four tracks between PID and Vertex fitting.

Three tracks after Vertex fitting.

Plots:Data@3080MeV

Three and four tracks between PID and Vertex fitting.

Three tracks after Vertex fitting.
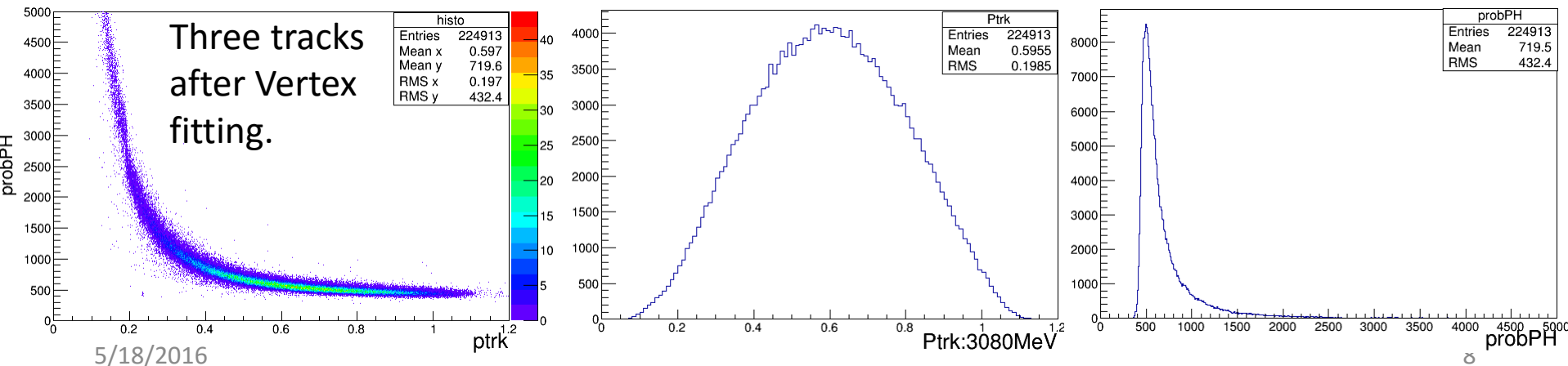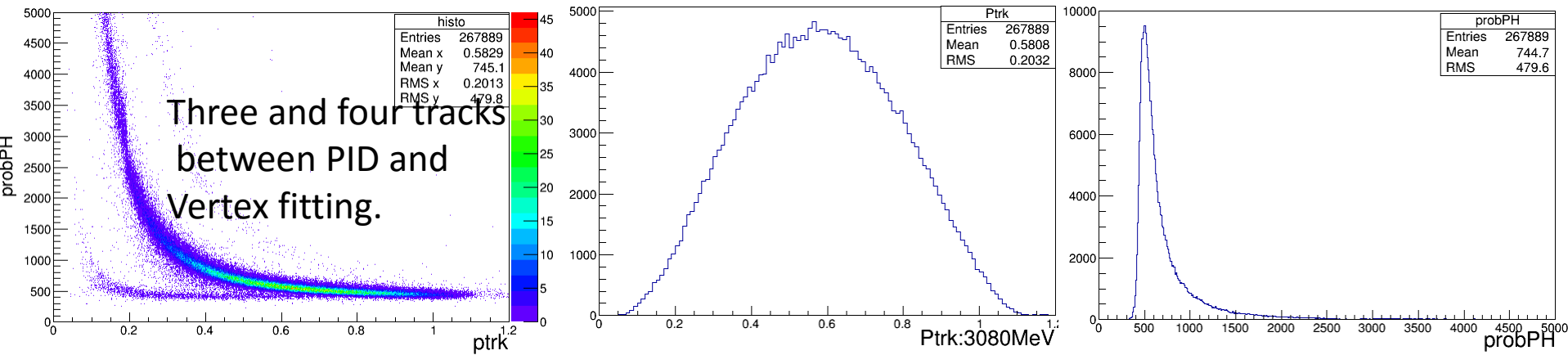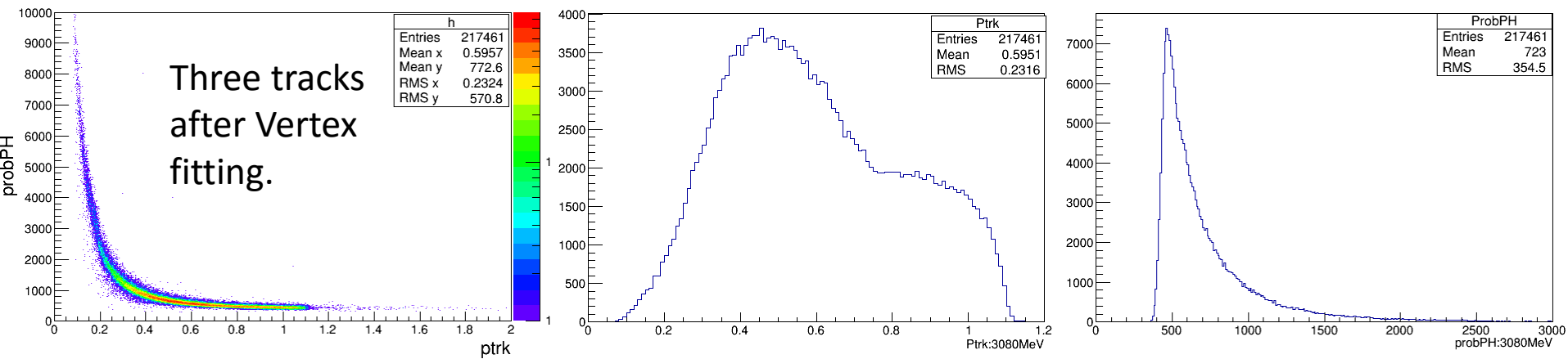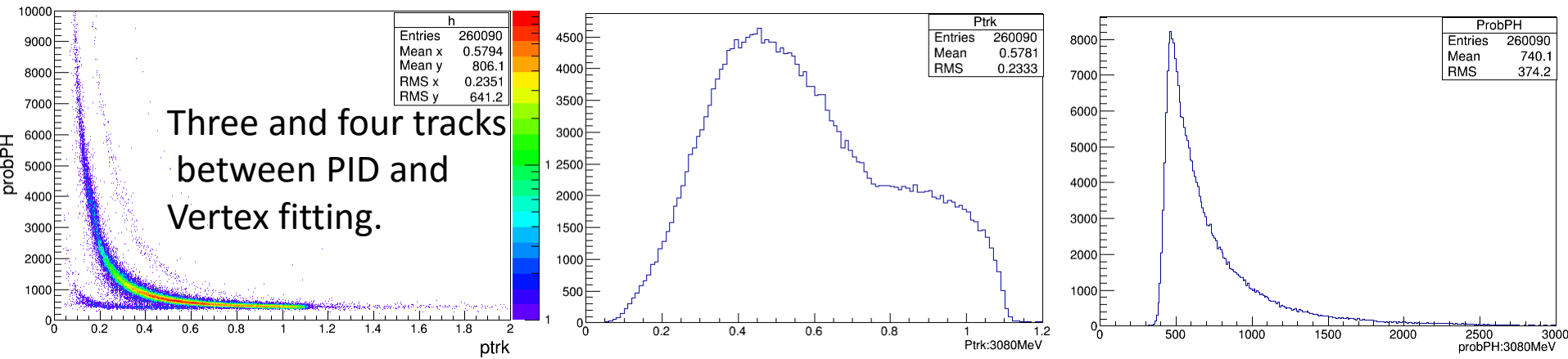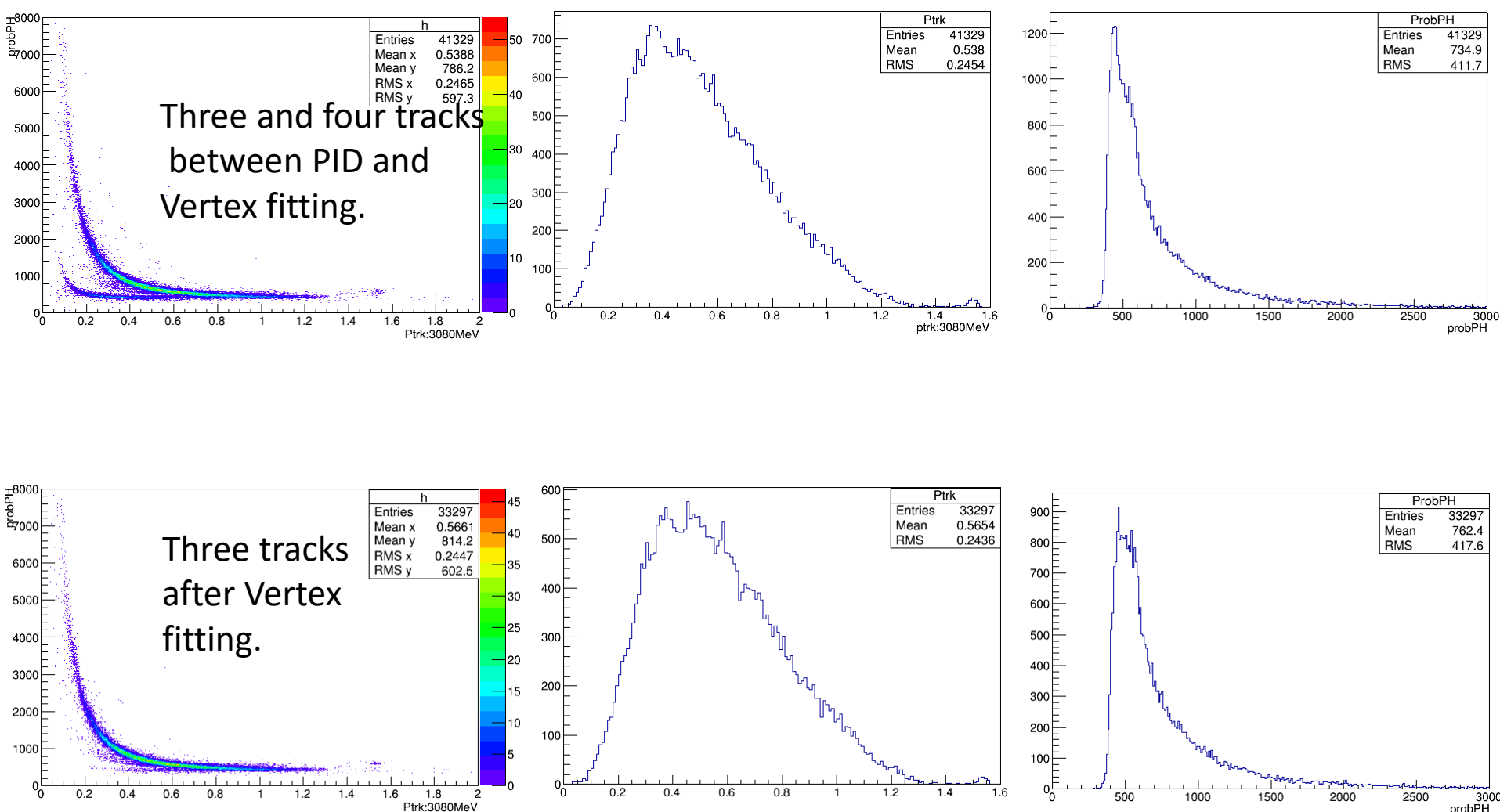
@3080MeV:MC
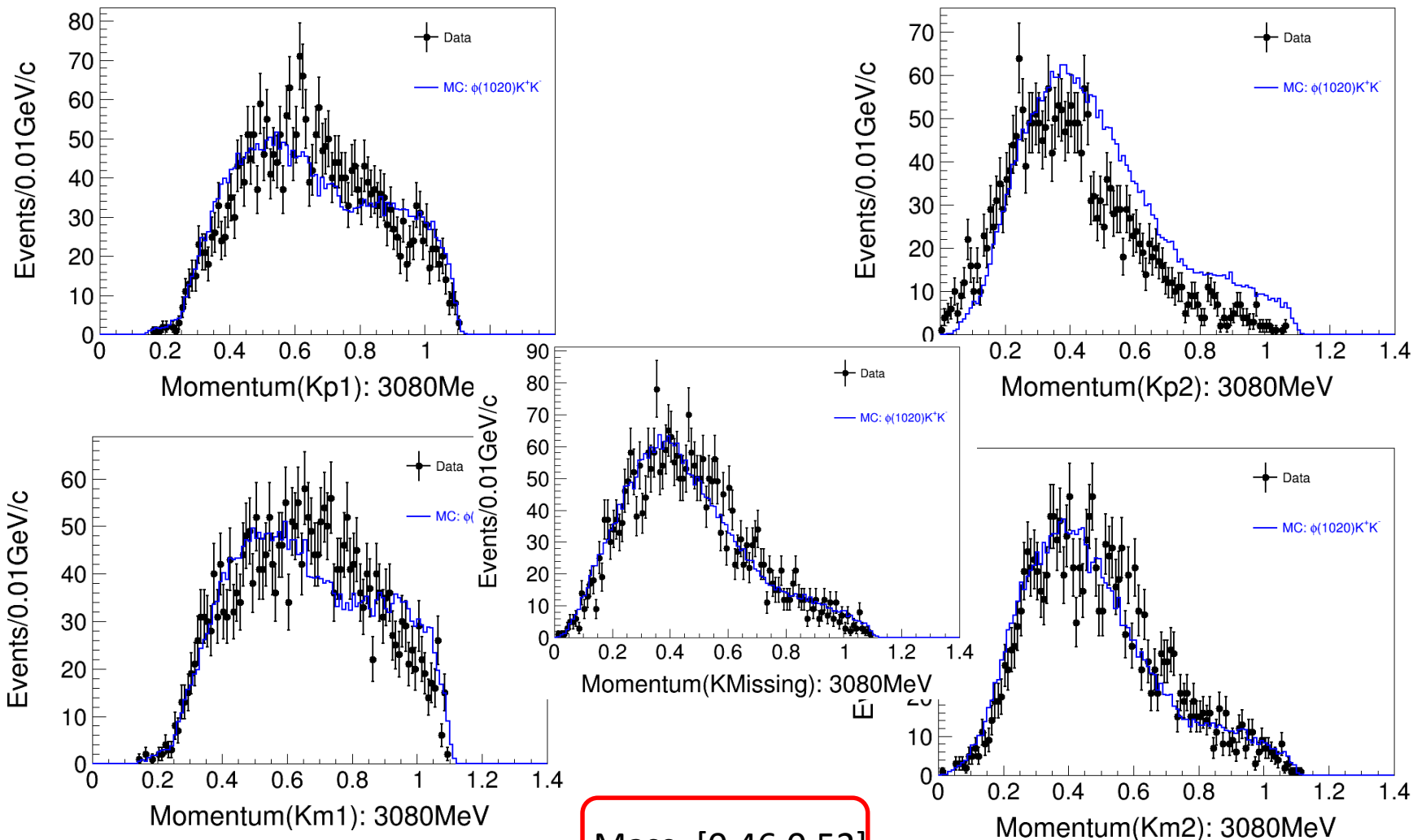
Mass=[0.46,0.52]

Plots:Data@2125MeV

Three tracks after Vertex fitting.

Three and four tracks between PID and Vertex fitting.

Plots:Data@2125MeV

Mass>=0

0.4<=Mass<=0.6
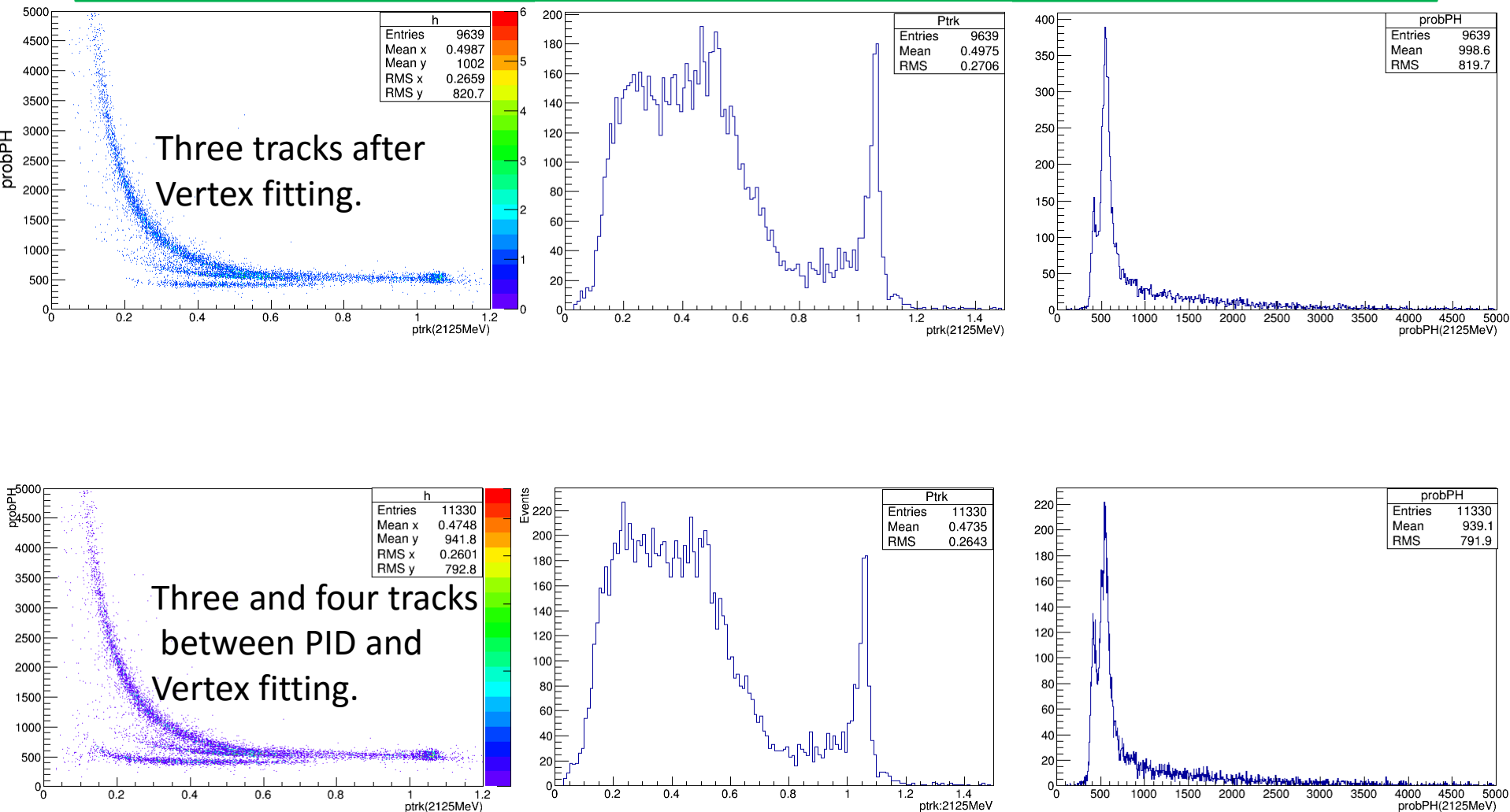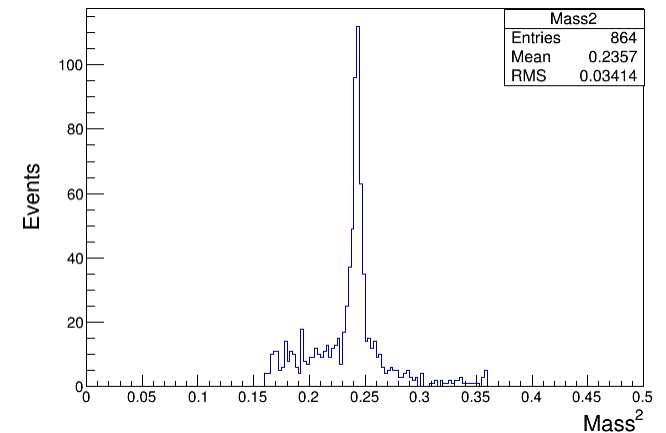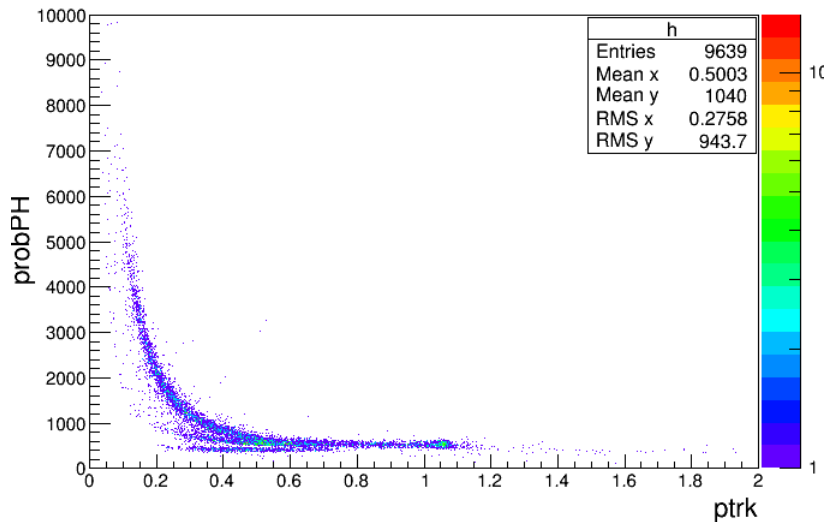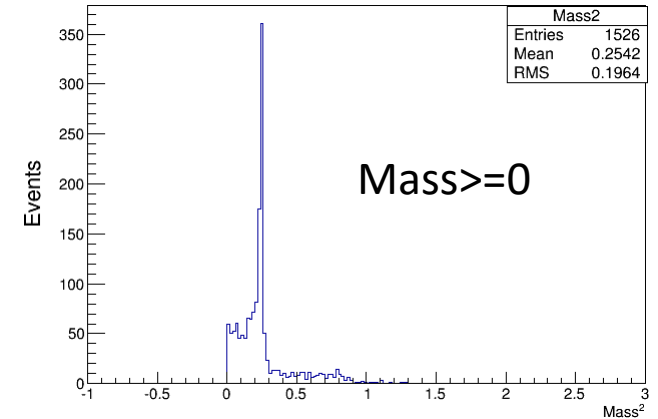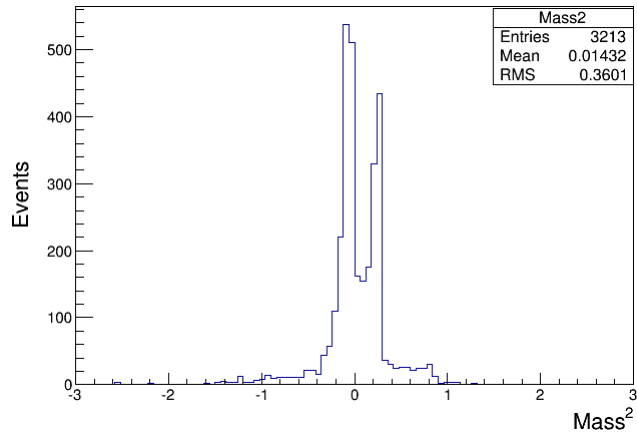
Plots:Data@2125MeV

X_axis:Ptrk_KMissing
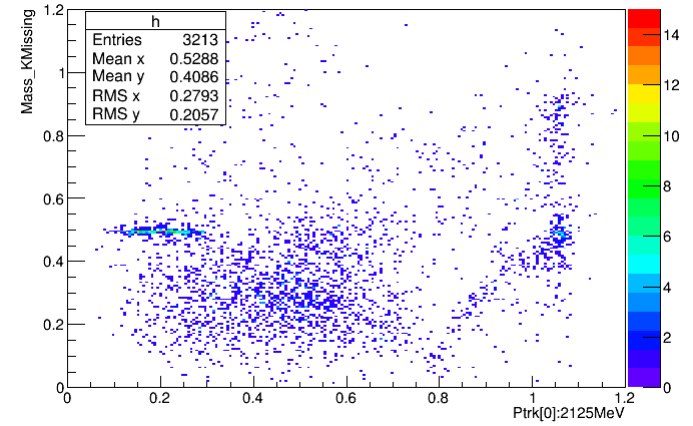
X_axis:Ptrk[0]
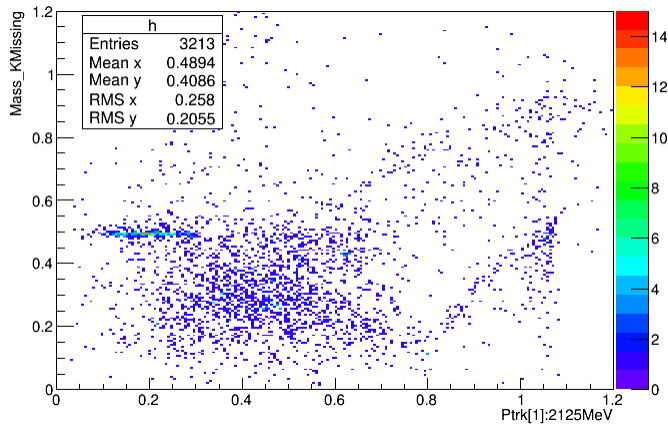
X_axis:Ptrk[2]
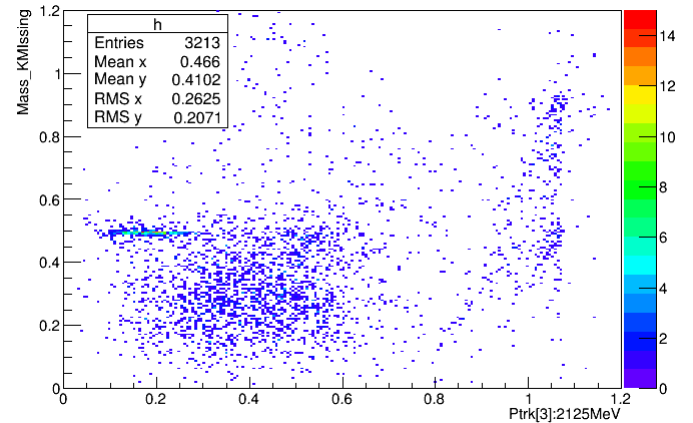
X_axis:Ptrk[3]

Plots:Data@2125MeV
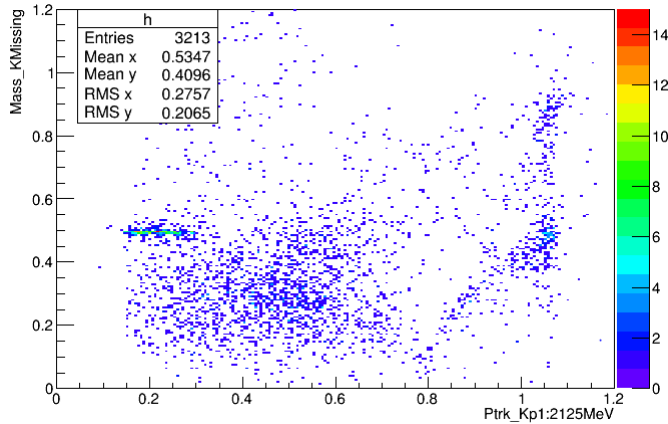
Ptrk_Kp1
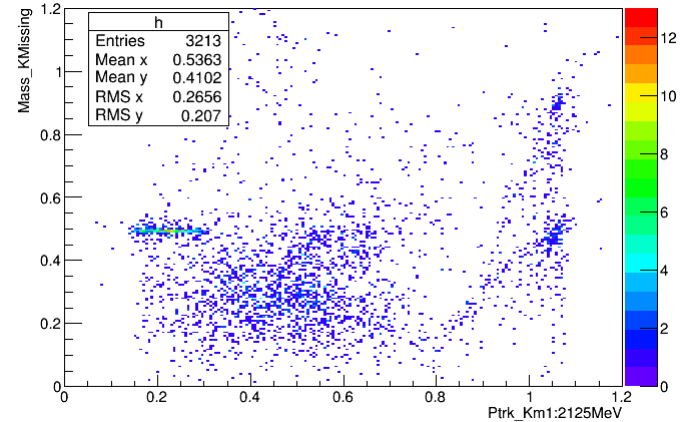
Ptrk_Km1
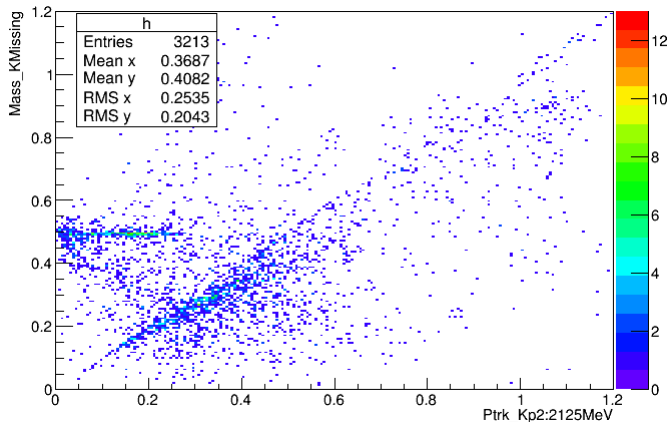
Ptrk_Kp2
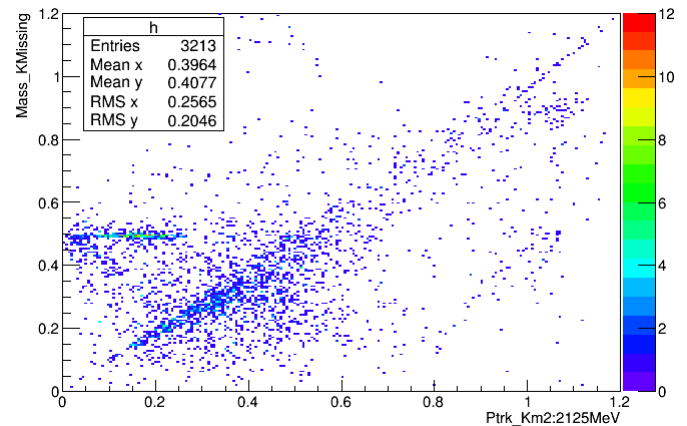
Ptrk_Km2

Plots:Data@2125MeV
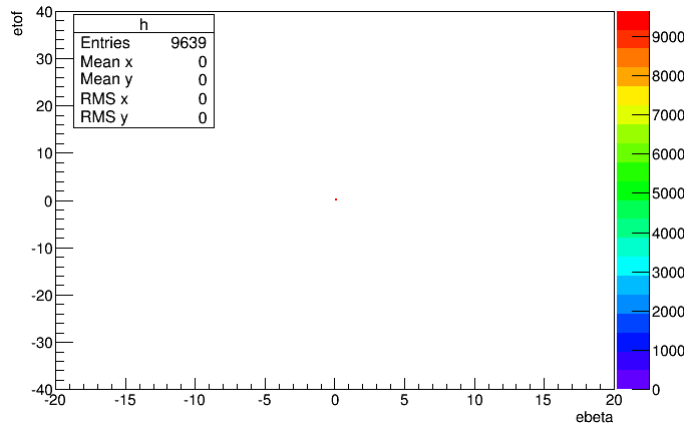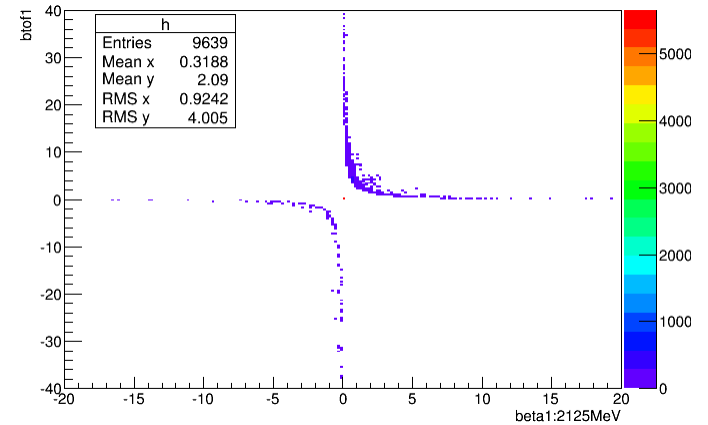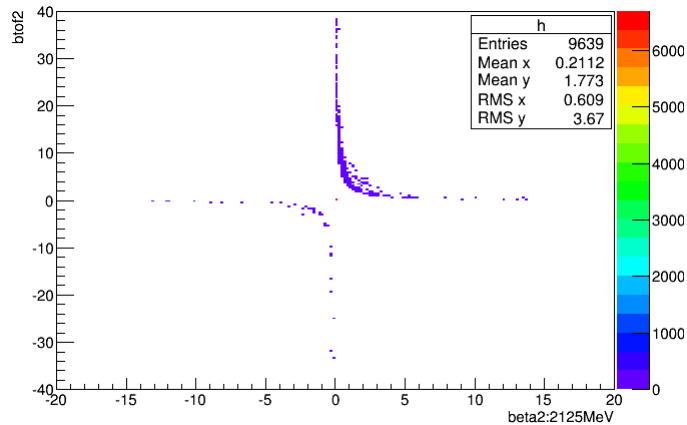
Plots:KKPiPi_MC@2125MeV
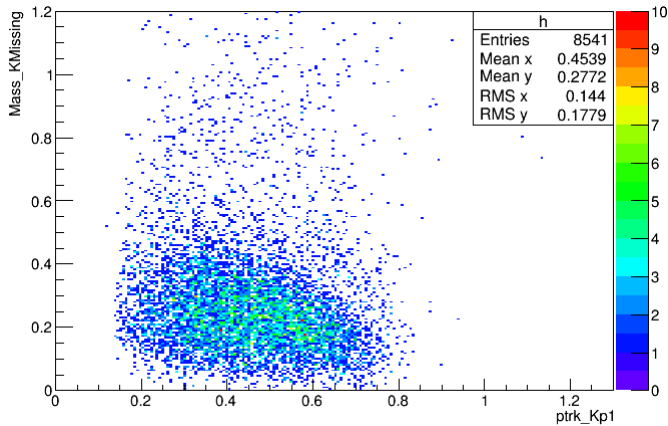
X_axis:Ptrk_Kp1
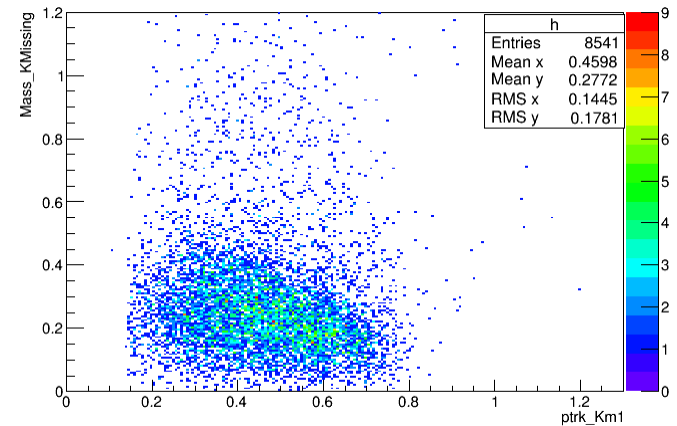
X_axis:Ptrk_Km1
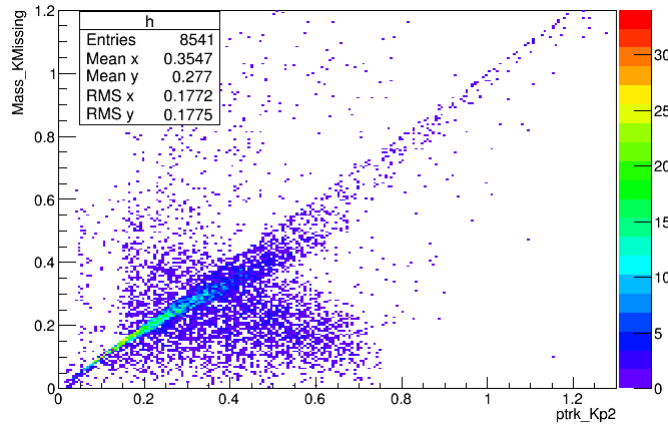
X_axis:Ptrk_Kp2
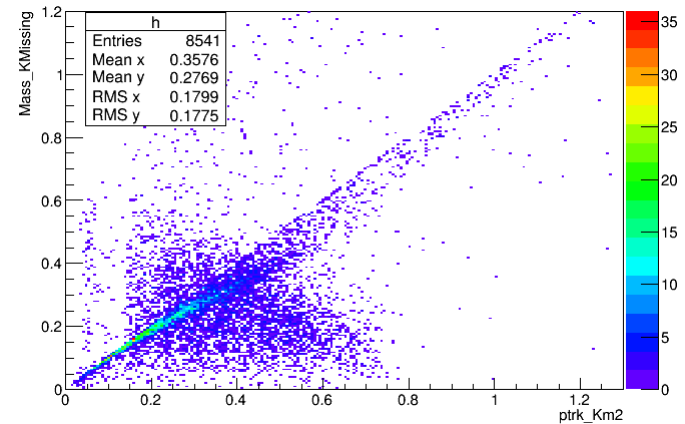
X_axis:Ptrk_Km2

Plots:KKPiPi_MC@2125MeV

X_axis:Ptrk_KMissing

X_axis:Ptrk_KMissing

X_axis:Mass_KMissing

X_axis:Mass_KMissing

Plots:PhiKK_MC@2125MeV

Three and four tracks
 between PID and
Vertex fitting.

Three tracks after
Vertex fitting.

Plots

Mass=[0.48,0.5]
Events=431

Mass=[0.0,0.9]
Events=1479

Data

Events=1048

Mass=[0.0,0.48)||(0.5,0.9] 20

Hadronic MC @3080MeV

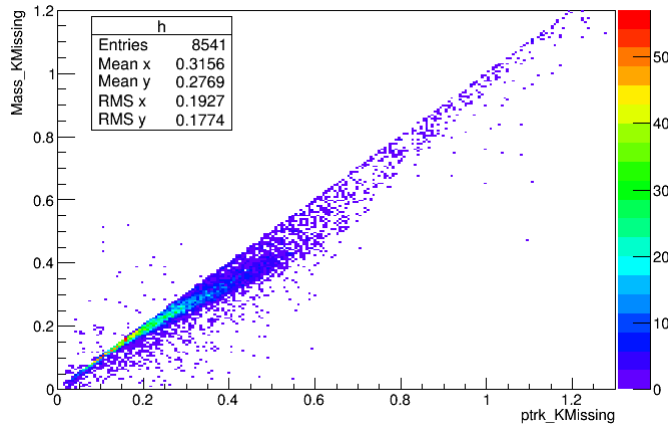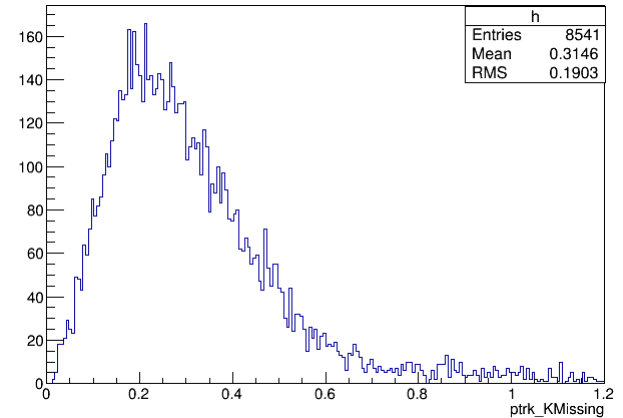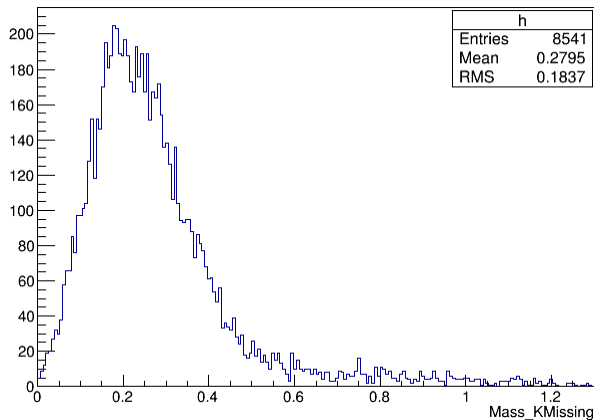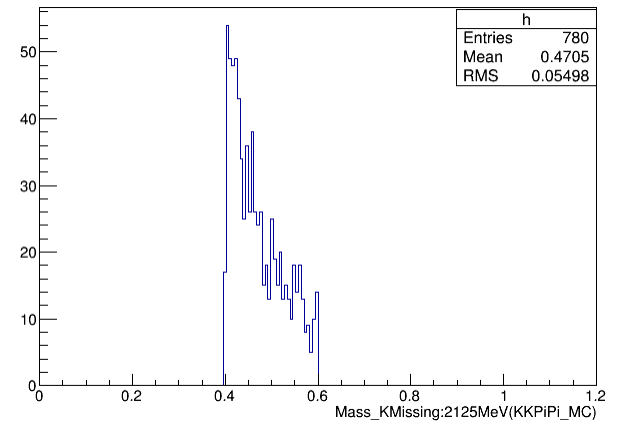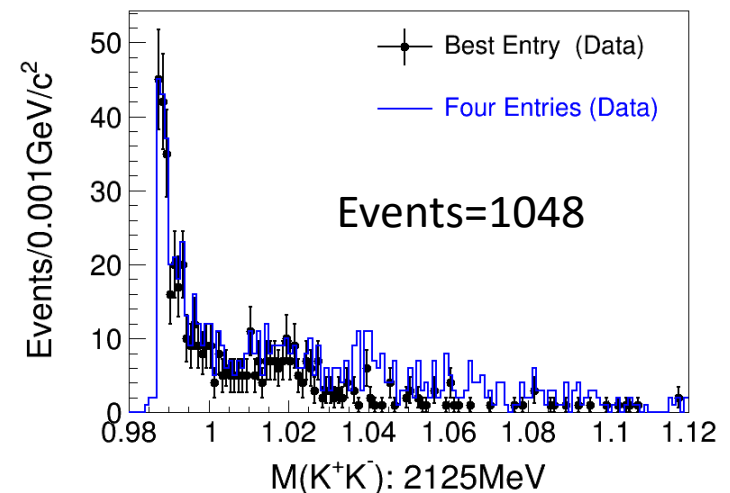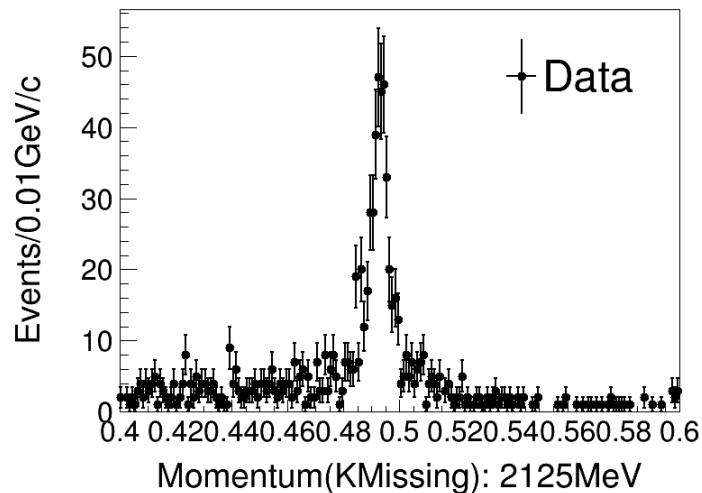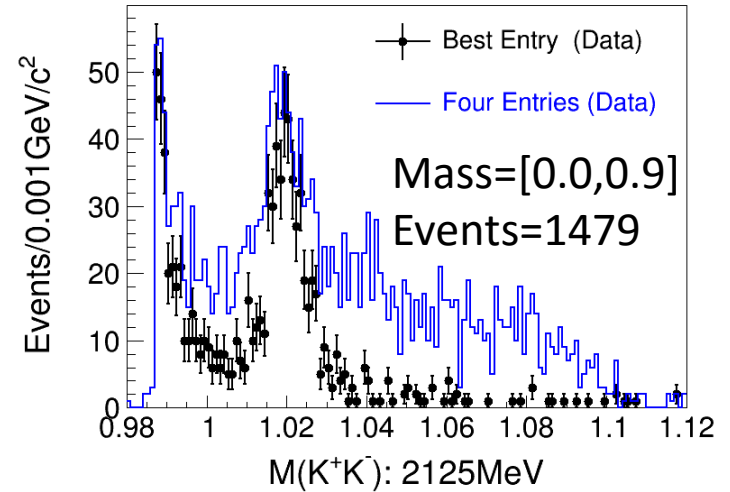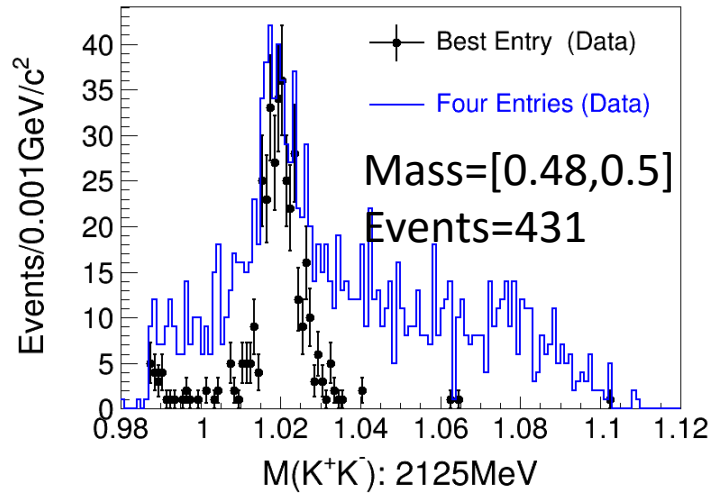| No.	decay chain	final states	iTopology	nEvt	nTot
0	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-K^+K^-$	$K^-K^-K^+K^+$	3	2694	2694
1	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-$	$\pi^-K^-\pi^+K^+$	1	1463	4157
2	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	7	881	5038
3	$e^+e^- \to \gamma^*, \gamma^* \to K^*K^+\pi^-, K^* \to K^+\pi^-$	$\pi^-\pi^-K^+K^+$	27	381	5419
4	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-f_0(1710), f_0(1710) \to K^-K^+$	$K^-K^-\gamma K^+K^+$	2	360	5779
5	$e^+e^- \to \gamma^*, \gamma^* \to K^*K^-\pi^+, K^* \to K^+\pi^-$	$\pi^-K^-\pi^+K^+$	4	346	6125
6	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\pi^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	8	323	6448
7	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to f_2'K^+K^-, f_2' \to K^+K^-$	$K^-K^-\gamma K^+K^+$	0	321	6769
8	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-h_1(1380), h_1(1380) \to K^{*+}K^-, K^{*+} \to K^+\pi^0$	$K^-K^-\pi^0\gamma K^+K^+$	16	258	7027
9	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-h_1(1380)K^+, h_1(1380) \to K^{*-}K^+, K^{*-} \to K^-\pi^0$	$K^-K^-\pi^0\gamma K^+K^+$	11	223	7250
10	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-h_1(1380)K^+, h_1(1380) \to \bar{K}^*K^0, \bar{K}^* \to K^-\pi^+$	$K^-K^-K_L\pi^+\gamma K^+$	22	164	7414
11	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to h_1(1380)K^+K^-, h_1(1380) \to K^*\bar{K}^0, K^* \to K^+\pi^-$	$\pi^-K^-K_L\gamma K^+K^+$	23	135	7549
12	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^*K^+\pi^-, K^* \to K^+\pi^-$	$\pi^-\pi^-\gamma K^+K^+$	17	119	7668
13	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to h_1(1380)K^+K^-, h_1(1380) \to K^{*-}K^+, K^{*-} \to \bar{K}^0\pi^-$	$\pi^-K^-K_L\gamma K^+K^+$	12	116	7784
14	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to h_1(1380)K^+K^-, h_1(1380) \to K^{*+}K^-, K^{*+} \to K^0\pi^+$	$K^-K^-K_L\pi^+\gamma K^+$	36	107	7891
15	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^*K^-\pi^+, K^* \to K^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	34	103	7994
16	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\rho^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+K^+$	39	74	8068
17	$e^+e^- \to \gamma^*, \gamma^* \to K_2^{*0}K^-\pi^+, K_2^{*0} \to K^+\pi^-$	$\pi^-K^-\pi^+K^+$	50	55	8123
18	$e^+e^- \to \gamma^*, \gamma^* \to K_2^{*0}K^+\pi^-, K_2^{*0} \to K^+\pi^-$	$\pi^-\pi^-K^+K^+$	66	49	8172
19	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	37	47	8219
20	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\rho^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	61	45	8264
21	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to f_1(1420)K^+K^-, f_1(1420) \to K^+K^-\pi^0$	$K^-K^-\pi^0\gamma K^+K^+$	32	45	8309
22	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-h_1(1380), h_1(1380) \to \bar{K}^*K^0, \bar{K}^* \to K^-\pi^+, K_S \to \pi^0\pi^0$	$K^-K^-\pi^0\pi^0\pi^+\gamma K^+$	69	44	8353
23	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-$	$K^-\gamma K^+$	18	43	8396
24	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-h_1(1380), h_1(1380) \to K^*\bar{K}^0, K^* \to K^+\pi^-, K_S \to \pi^0\pi^0$	$\pi^-K^-\pi^0\pi^0\gamma K^+K^+$	19	43	8439

Hadronic MC @3080MeV

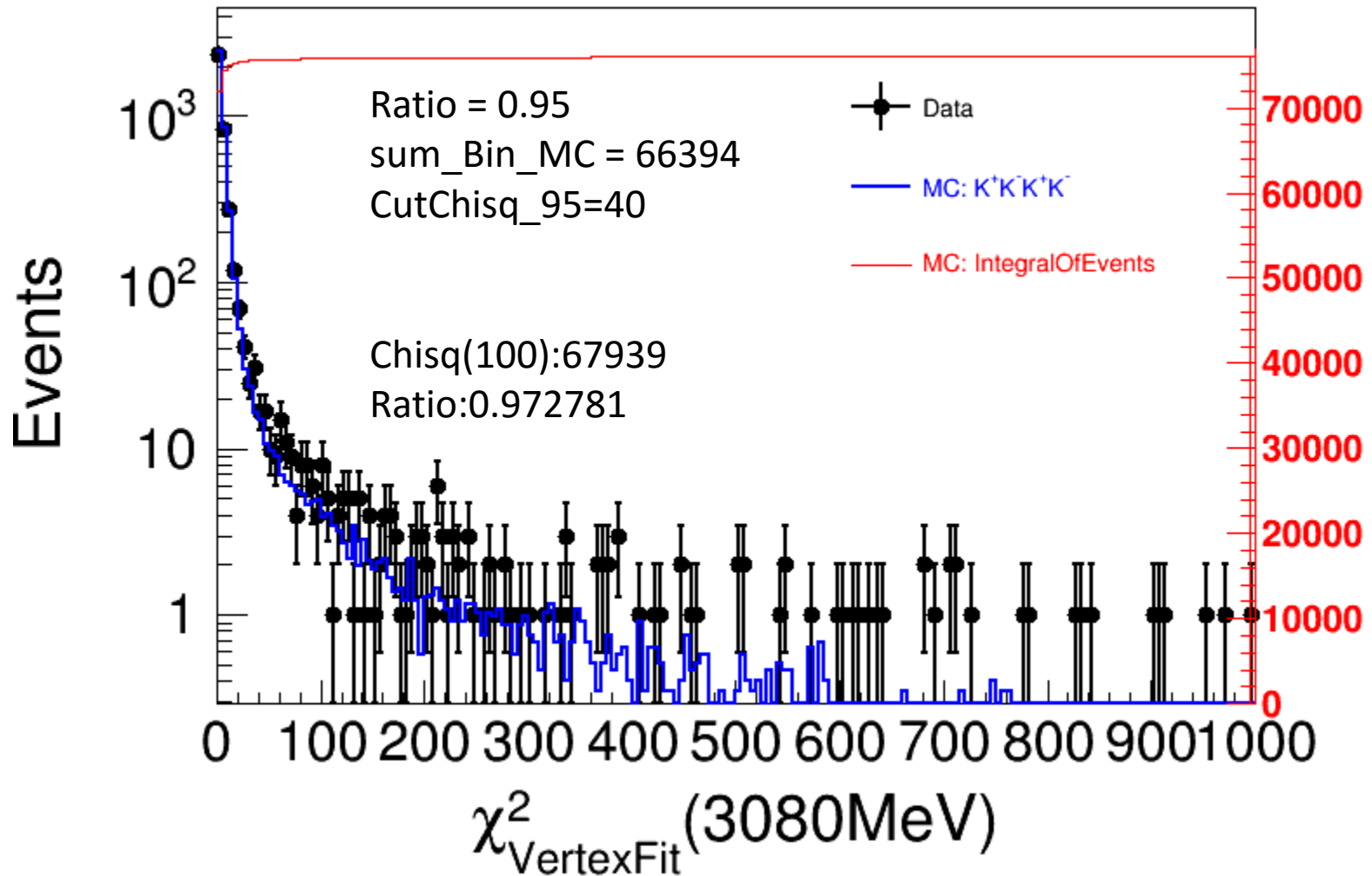| No.	decay chain	final states	iTopology	nEvt	nTot
0	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-K^+K^-$	$K^-K^-K^+K^+$	2	2604	2604
1	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	6	180	2784
2	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-\pi^0$	$\pi^-K^-\pi^+\gamma\gamma K^+$	5	136	2920
3	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-f_0(1710), f_0(1710) \to K^-K^+$	$K^-K^-\gamma K^+K^+$	1	119	3039
4	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to f_2'K^+K^-, f_2' \to K^+K^-$	$K^-K^-\gamma K^+K^+$	0	105	3144
5	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to f_0(1710)K^+K^-, f_0(1710) \to K^-K^+$	$K^-K^-\gamma K^+K^+$	3	103	3247
6	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-f_2', f_2' \to K^+K^-$	$K^-K^-\gamma K^+K^+$	8	103	3350
7	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-f_0(1710)K^+, f_0(1710) \to K^-K^+$	$K^-K^-\gamma K^+K^+$	16	63	3413
8	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-f_2'K^+, f_2' \to K^+K^-$	$K^-K^-\gamma K^+K^+$	19	53	3466
9	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\pi^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	14	36	3502
10	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	15	26	3528
11	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^*K^+\pi^-, K^* \to K^+\pi^-$	$\pi^-\pi^-\gamma K^+K^+$	10	20	3548
12	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\pi^+\pi^-\pi^0$	$\pi^-K^-\pi^+\gamma\gamma\gamma K^+$	13	20	3568
13	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^*K^-\pi^+, K^* \to K^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	20	16	3584
14	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-K^+K^-K^+$	$K^-K^-\gamma K^+K^+$	27	12	3596
15	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to f_0(1710)f_0(1710), f_0(1710) \to K^-K^+, f_0(1710) \to K^-K^+$	$K^-K^-\gamma K^+K^+$	37	6	3602
16	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+b_1^0K^-, b_1^0 \to \omega\pi^0, \omega \to \pi^-\pi^+\pi^0$	$\pi^-K^-\pi^+\gamma\gamma\gamma\gamma K^+$	47	6	3608
17	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-K^+h_1(1170), h_1(1170) \to \rho^0\pi^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+\gamma\gamma\gamma K^+$	12	5	3613
18	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-\eta, \eta \to \gamma\gamma$	$\pi^-K^-\pi^+\gamma\gamma K^+$	9	4	3617
19	$e^+e^- \to \gamma^*, \gamma^* \to K_2^{*0}K^-\pi^+, K_2^{*0} \to \rho^-K^+, \rho^- \to \pi^-\pi^0$	$\pi^-K^-\pi^+\gamma\gamma K^+$	23	4	3621
20	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-\eta, \eta \to \pi^0\pi^0\pi^0$	$\pi^-K^-\pi^+\gamma\gamma\gamma\gamma\gamma\gamma K^+$	39	4	3625
21	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to f_2'f_0(1710), f_2' \to K^+K^-, f_0(1710) \to K^-K^+$	$K^-K^-\gamma K^+K^+$	24	4	3629
22	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\rho^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	54	3	3632
23	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to h_1(1170)K^-K^+, h_1(1170) \to \rho^-\pi^+, \rho^- \to \pi^-\pi^0$	$\pi^-K^-\pi^+\gamma\gamma\gamma K^+$	31	2	3634
24	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to h_1(1170)K^-K^+, h_1(1170) \to \rho^0\pi^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+\gamma\gamma\gamma K^+$	34	2	3636

Hadronic MC @2125MeV

No.	decay chain	final states	iTopology	nEvt	nTot
0	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-K^+K^-K^+$	$K^-K^-\gamma K^+K^+$	3	534	534
1	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-$	$\pi^-K^-\pi^+K^+$	5	364	898
2	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-K^+K^-$	$K^-K^-K^+K^+$	1	259	1157
3	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\pi^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	0	213	1370
4	$e^+e^- \to \gamma^*, \gamma^* \to \phi f_0(980), \phi \to K^+K^-, f_0(980) \to K^+K^-$	$K^-K^-K^+K^+$	6	136	1506
5	$e^+e^- \to \gamma^*, \gamma^* \to K^*K^+\pi^-, K^* \to K^+\pi^-$	$\pi^-\pi^-K^+K^+$	7	109	1615
6	$e^+e^- \to \gamma^*, \gamma^* \to K^*K^-\pi^+, K^* \to K^+\pi^-$	$\pi^-K^-\pi^+K^+$	2	105	1720
7	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^*K^-\pi^+, K^* \to K^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	4	80	1800
8	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	16	61	1861
9	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^*K^+\pi^-, K^* \to K^+\pi^-$	$\pi^-\pi^-\gamma K^+K^+$	17	59	1920
10	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\rho^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+K^+$	10	58	1978
11	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-\rho^0, \rho^0 \to \pi^+\pi^-$	$\pi^-K^-\pi^+\gamma K^+$	9	42	2020
12	$e^+e^- \to \gamma^*, \gamma^* \to \phi\pi^-\pi^+, \phi \to K^+K^-$	$\pi^-K^-\pi^+K^+$	14	37	2057
13	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to \phi f_0(980), \phi \to K^+K^-, f_0(980) \to K^+K^-$	$K^-K^-\gamma K^+K^+$	24	33	2090
14	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-$	$K^-\gamma K^+$	15	32	2122
15	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^{*-}K^+\pi^0, K^{*-} \to K^-\pi^0$	$K^-\pi^0\pi^0\gamma K^+$	22	25	2147
16	$e^+e^- \to \gamma^*, \gamma^* \to K^{*+}K^-\pi^0, K^{*+} \to K^+\pi^0$	$K^-\pi^0\pi^0K^+$	23	23	2170
17	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^0\pi^0$	$K^-\pi^0\pi^0K^+$	12	23	2193
18	$e^+e^- \to \gamma^*, \gamma^* \to K^{*-}K^+\pi^0, K^{*-} \to K^-\pi^0$	$K^-\pi^0\pi^0K^+$	34	23	2216
19	$e^+e^- \to \gamma^*, \gamma^* \to \phi f_0(980), \phi \to K^+K^-, f_0(980) \to \pi^+\pi^-$	$\pi^-K^-\pi^+K^+$	11	20	2236
20	$e^+e^- \to \gamma^*, \gamma^* \to \omega K^+K^-, \omega \to \pi^-\pi^+\pi^0$	$\pi^-K^-\pi^0\pi^+K^+$	29	19	2255
21	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^{*+}K^-\pi^0, K^{*+} \to K^+\pi^0$	$K^-\pi^0\pi^0\gamma K^+$	20	18	2273
22	$e^+e^- \to \gamma^*, \gamma^* \to \phi\gamma, \phi \to K^+K^-$	$K^-\gamma K^+$	21	16	2289
23	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-K^+\pi^-\pi^+$	$\pi^-K^-\pi^+\gamma K^+$	8	16	2305
24	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to \phi\pi^-\pi^+, \phi \to K^+K^-$	$\pi^-K^-\pi^+\gamma K^+$	19	14	2319

Hadronic MC @2125MeV

kMissing: Kmass[0.4,0.6]

No.	decay chain	final states	iTopology	nEvt	nTot
0	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^-K^+K^-K^+$	$K^-K^-\gamma K^+K^+$	1	309	309
1	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-K^+K^-$	$K^-K^-K^+K^+$	0	257	566
2	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	3	217	783
3	$e^+e^- \to \gamma^*, \gamma^* \to \phi f_0(980), \phi \to K^+K^-, f_0(980) \to K^+K^-$	$K^-K^-K^+K^+$	2	134	917
4	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-K^+K^-$	$K^-K^-\gamma K^+K^+$	4	61	978
5	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to \phi f_0(980), \phi \to K^+K^-, f_0(980) \to K^+K^-$	$K^-K^-\gamma K^+K^+$	5	33	1011
6	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-$	K^-K^+	9	3	1014
7	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^+K^-$	$K^-\gamma K^+$	7	2	1016
8	$e^+e^- \to \gamma^*, \gamma^* \to R_A\gamma, R_A \to K^{*-}K^+\pi^0, K^{*-} \to K^-\pi^0$	$K^-\gamma\gamma\gamma\gamma\gamma K^+$	8	1	1017
9	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-\eta, \eta \to \pi^-\pi^+\pi^0$	$\pi^-\pi^-K^-\pi^+\pi^+\gamma\gamma K^+$	6	1	1018
10	$e^+e^- \to \gamma^*, \gamma^* \to K^{*+}K^-\pi^0, K^{*+} \to K^+\pi^0$	$K^-\gamma\gamma\gamma\gamma K^+$	10	1	1019
11	$e^+e^- \to \gamma^*, \gamma^* \to R_B\gamma, R_B \to \pi^-\eta\pi^+K^-K^+\pi^0, \eta \to \pi^-\pi^+\pi^0$	$\pi^-\pi^-K^-\pi^+\pi^+\gamma\gamma\gamma\gamma\gamma K^+$	11	1	1020
12	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-\eta, \eta \to \gamma\gamma$	$\pi^-K^-\pi^+\gamma\gamma K^+$	12	1	1021
13	$e^+e^- \to \gamma^*, \gamma^* \to K^+K^-\pi^+\pi^-\pi^0$	$\pi^-K^-\pi^+\gamma\gamma K^+$	13	1	1022

Chisq(Vertex Fit)

Ratio = 0.95
sum_Bin_MC = 66394
CutChisq_95=40

Chisq(100):67939
Ratio:0.972781

Data

MC: $K^+K^-K^+K^-$

MC: IntegralOfEvents

$\chi^2_{VertexFit}(3080MeV)$

Luminosity: @Boss665p01

(For Cross section Measurement of $e^+e^- \rightarrow K^+K^- K^+K^-$)

Luminosity Results for all energy points

Ecm(GeV)	$\mathcal{L}$ (pb^{-1})	Ecm(GeV)	$\mathcal{L}$ (pb^{-1})
2.0000	10.074±0.005±0.067	2.6444	33.722±0.013±0.216
2.0500	3.343±0.003±0.027	2.6464	34.003±0.013±0.282
2.1000	12.167±0.006±0.085	2.7000	1.034±0.002±0.007
2.1500	2.841±0.003±0.024	2.8000	1.008±0.002±0.007
2.1750	10.625±0.006±0.091	2.9000	105.253±0.025±0.905
2.2000	13.699±0.007±0.092	2.9500	15.942±0.010±0.143
2.2324	11.856±0.007±0.087	2.9810	16.071±0.010±0.095
2.3094	21.089±0.009±0.143	3.0000	15.881±0.010±0.110
2.3864	22.549±0.010±0.176	3.0200	17.290±0.011±0.123
2.3960	66.869±0.017±0.475	3.0800	126.185±0.029±0.921
2.5000	1.098±0.002±0.009		