

nnL T2 parameter scan

T2_20190927.root

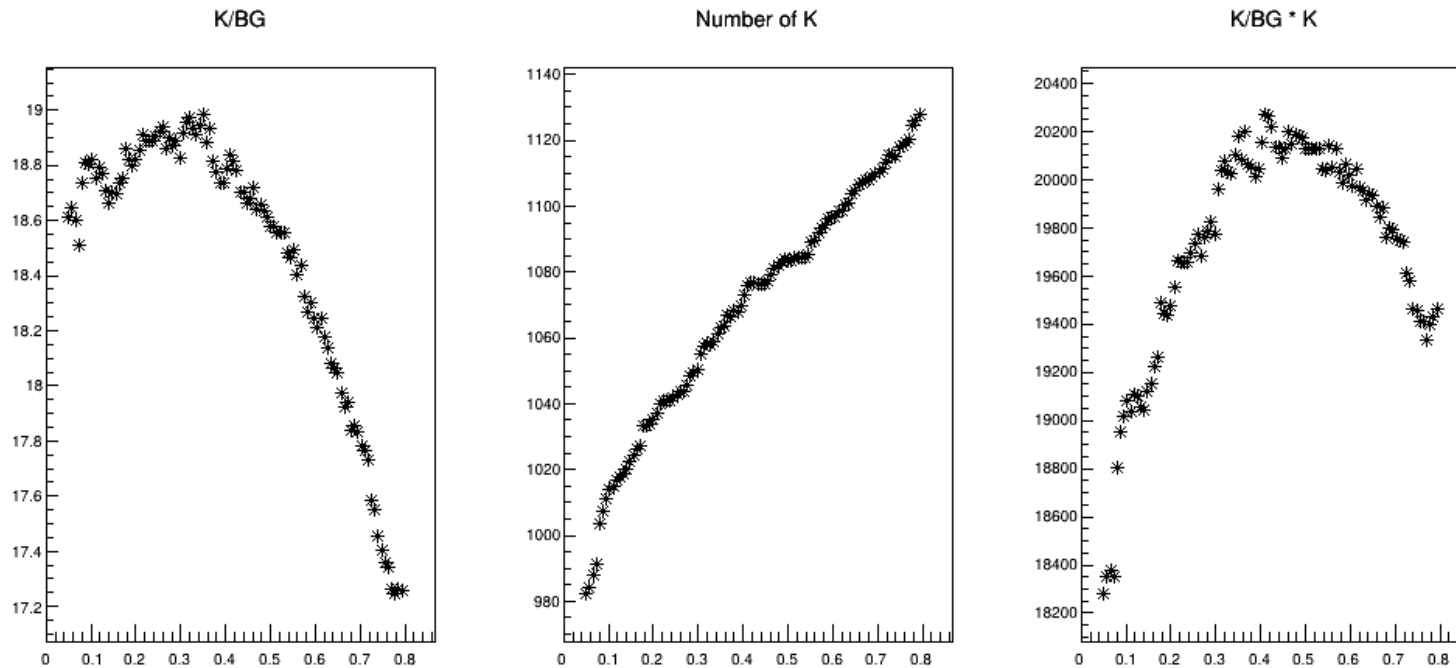
T2 data with T2 region (not A1 region)

```
TCut c_ctime_min = Form("ctime[0] > %1f", pro_param[0]);
TCut c_ctime_max = Form("ctime[0] < %1f", pro_param[1]);
TCut c_a1_max = Form("R.a1.asum_c[0] < %1f", pro_param[2]);
TCut c_a2_max = Form("R.a2.asum_c[0] < %1f", pro_param[3]);
TCut c_a2_min = Form("R.a2.asum_c[0] > %1f", pro_param[4]);
TCut c_zsum_max = Form("abs(R.tr.vz[0]+L.tr.vz[0])/2. < %1f", pro_param[5]);
TCut c_zsub_max = Form("abs(L.tr.vz[0]-R.tr.vz[0]) < %1f", pro_param[6]);
TCut c_gasche_min = Form("L.cer.asum_c[0] > %1f", pro_param[7]);
TCut c_zsum_min = Form("abs(R.tr.vz[0]+L.tr.vz[0])/2. > %1f", pro_param[8]);
```

default
min
max

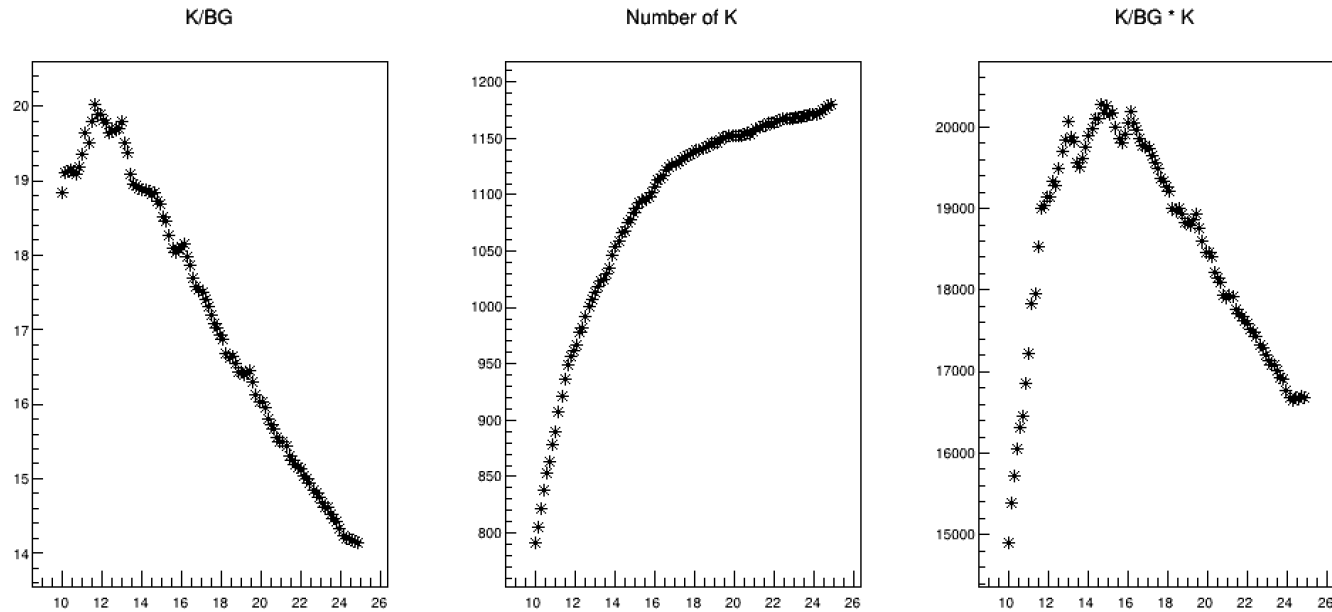
```
////////// 0 1 2 3 4 5 6 7 8
double T2_pro_param[9] = {-20, 20, 0.41, 14.65, 4.50, 0.1035, 0.01410, 1700, -1.};
double T2_scan_min[9] = {-20, 0, 0.05, 10.00, 0.00, 0.0500, 0.00500, 0, -1.};
double T2_scan_max[9] = { 0, 20, 0.80, 25.00, 10.0, 0.1250, 0.04000, 5000, -1.};
```

R.a1.asum_c < par



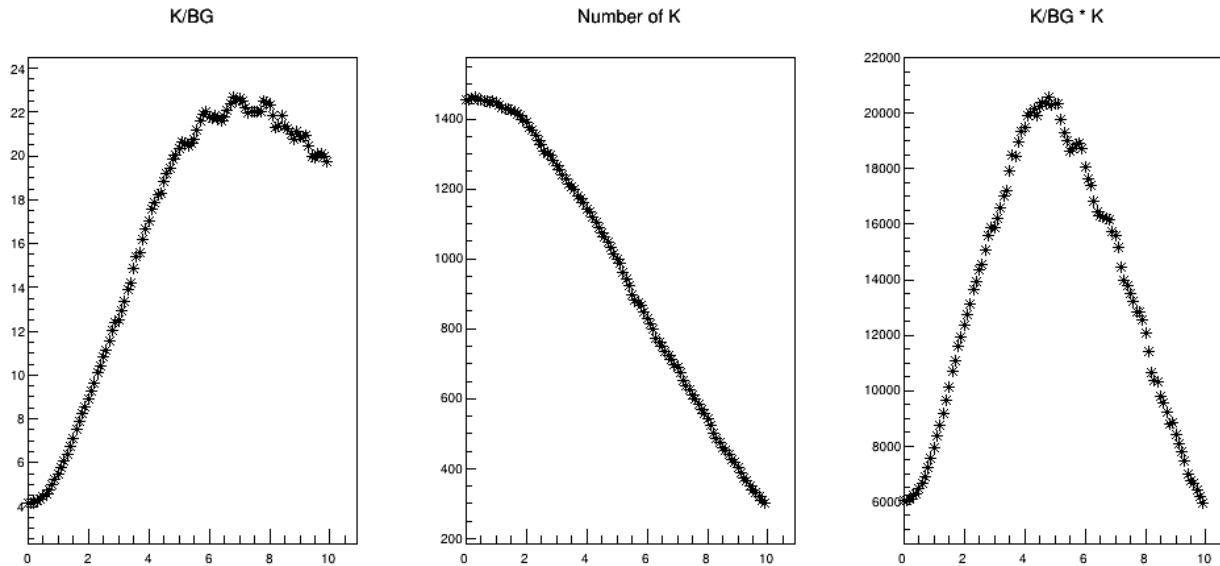
```
param = 0.41 NK = 1075.89 NBG = 57.1111 r = 18.8385 my_par = 20268.2
param = 0.4175 NK = 1076.78 NBG = 57.2222 r = 18.8175 my_par = 20262.2
param = 0.425 NK = 1076.67 NBG = 57.3333 r = 18.7791 my_par = 20218.8
param = 0.4625 NK = 1079.33 NBG = 57.6667 r = 18.7168 my_par = 20201.6
param = 0.365 NK = 1066.67 NBG = 56.3333 r = 18.9349 my_par = 20197.2
param = 0.4775 NK = 1082.89 NBG = 58 r = 18.6552 my_par = 20184.9
param = 0.485 NK = 1082.89 NBG = 58.1111 r = 18.6348 my_par = 20179.4
param = 0.35 NK = 1063 NBG = 56 r = 18.9821 my_par = 20178
param = 0.4925 NK = 1083.78 NBG = 58.2222 r = 18.6145 my_par = 20174
param = 0.4025 NK = 1072.89 NBG = 57.1111 r = 18.786 my_par = 20155.3
```

R.a2.asum_c < par



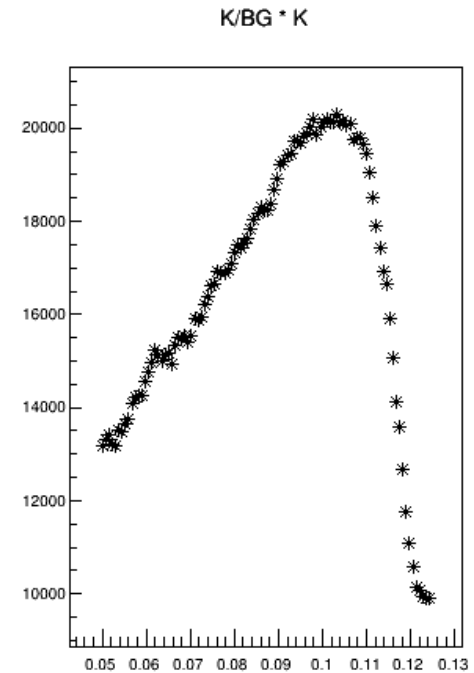
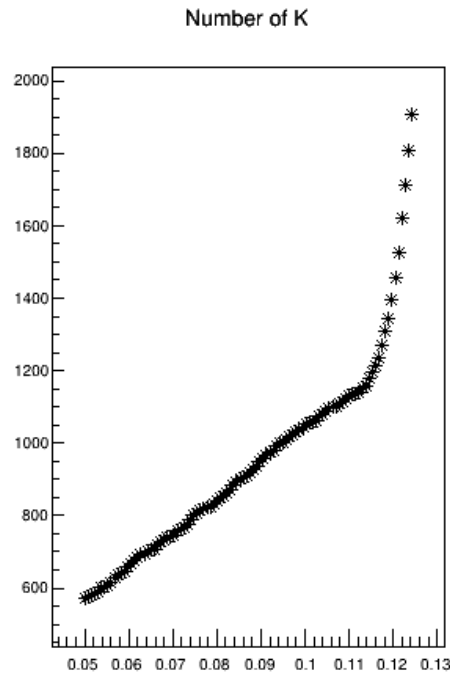
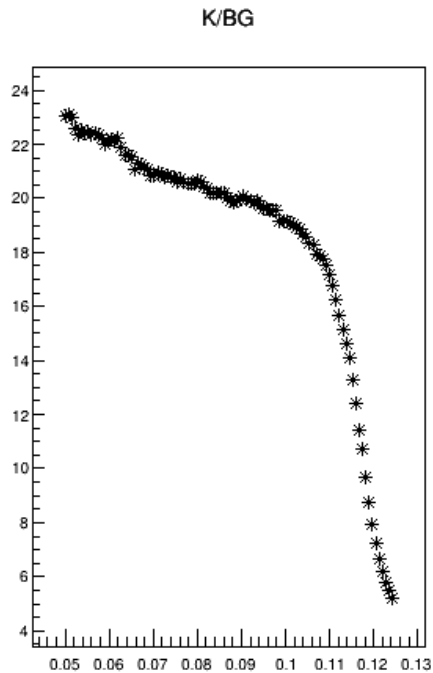
```
param = 14.65 NK = 1075.89 NBG = 57.1111 r = 18.8385 my_par = 20268.2
param = 14.95 NK = 1084 NBG = 58 r = 18.6897 my_par = 20259.6
param = 16.15 NK = 1112.67 NBG = 61.3333 r = 18.1413 my_par = 20185.2
param = 14.8 NK = 1077.44 NBG = 57.5556 r = 18.7201 my_par = 20169.8
param = 15.25 NK = 1092.78 NBG = 59.2222 r = 18.4522 my_par = 20164.1
param = 15.1 NK = 1088.22 NBG = 58.7778 r = 18.5142 my_par = 20147.5
param = 14.35 NK = 1066.44 NBG = 56.5556 r = 18.8566 my_par = 20109.5
param = 14.5 NK = 1068.22 NBG = 56.7778 r = 18.8141 my_par = 20097.6
param = 13 NK = 1013.78 NBG = 51.2222 r = 19.7918 my_par = 20064.4
param = 16.3 NK = 1115 NBG = 62 r = 17.9839 my_par = 20052
```

R.a2.asum_c > par



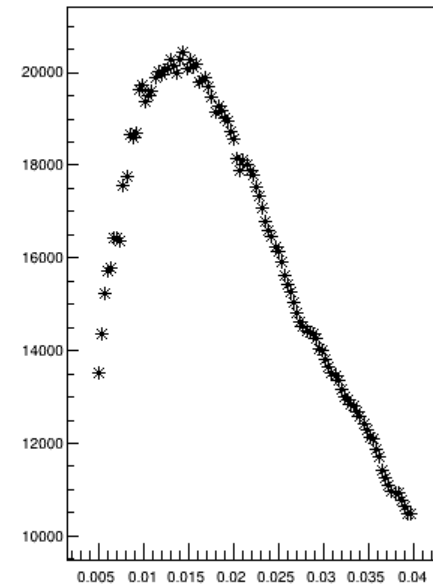
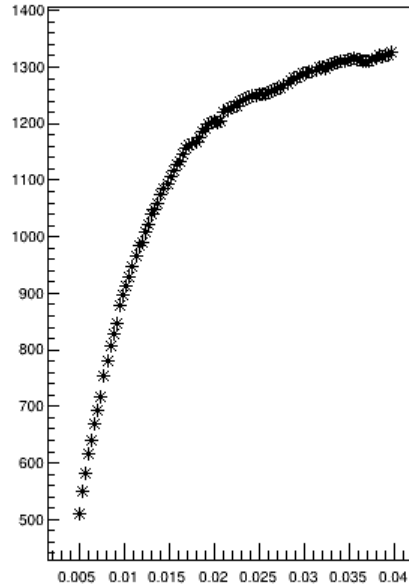
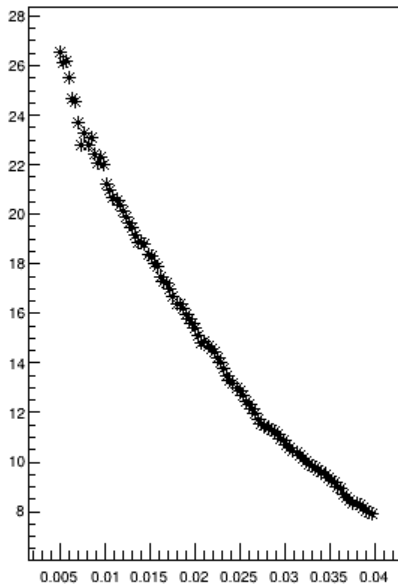
```
param = 4.8 NK = 1034 NBG = 52 r = 19.8846 my_par = 20560.7  
param = 4.6 NK = 1061.67 NBG = 55.3333 r = 19.1867 my_par = 20369.9  
param = 5.1 NK = 986.222 NBG = 47.7778 r = 20.6419 my_par = 20357.5  
param = 4.7 NK = 1046.22 NBG = 53.7778 r = 19.4545 my_par = 20353.8  
param = 5 NK = 998 NBG = 49 r = 20.3673 my_par = 20326.6  
param = 4.9 NK = 1013.44 NBG = 50.5556 r = 20.0462 my_par = 20315.7  
param = 4.5 NK = 1075.89 NBG = 57.1111 r = 18.8385 my_par = 20268.2  
param = 4.3 NK = 1104.44 NBG = 60.5556 r = 18.2385 my_par = 20143.4  
param = 4.2 NK = 1120.22 NBG = 62.7778 r = 17.8442 my_par = 19989.5  
param = 4.1 NK = 1134.44 NBG = 64.5556 r = 17.5731 my_par = 19935.8
```

$vz \text{ sum}/2 < \text{par}$



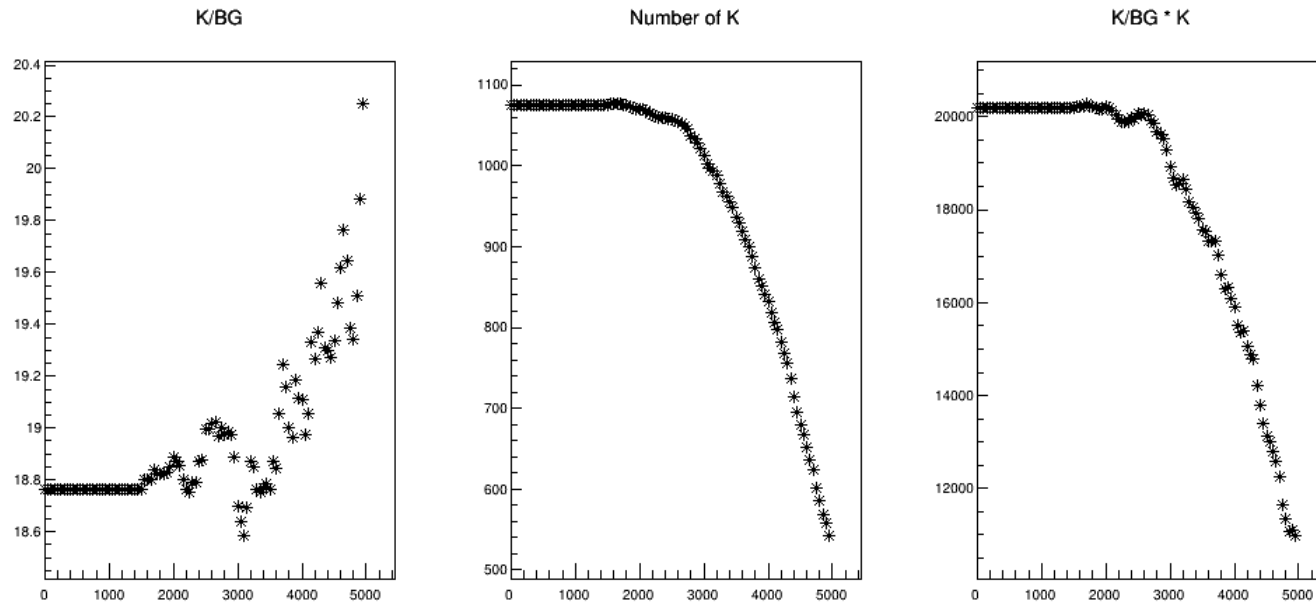
```
param = 0.10325 NK = 1074.11 NBG = 56.8889 r = 18.8809 my_par = 20280.1
param = 0.101 NK = 1055.78 NBG = 55.2222 r = 19.1187 my_par = 20185.1
param = 0.098 NK = 1033.11 NBG = 52.8889 r = 19.5336 my_par = 20180.4
param = 0.10475 NK = 1086.44 NBG = 58.5556 r = 18.5541 my_par = 20158
param = 0.1025 NK = 1063.78 NBG = 56.2222 r = 18.9209 my_par = 20127.7
param = 0.10025 NK = 1052 NBG = 55 r = 19.1273 my_par = 20121.9
param = 0.104 NK = 1078.22 NBG = 57.7778 r = 18.6615 my_par = 20121.3
param = 0.10175 NK = 1058.33 NBG = 55.6667 r = 19.012 my_par = 20121
param = 0.10625 NK = 1099.78 NBG = 60.2222 r = 18.262 my_par = 20084.1
param = 0.1055 NK = 1094.33 NBG = 59.6667 r = 18.3408 my_par = 20070.9
```

sub < par



```
param = 0.01445 NK = 1085.33 NBG = 57.6667 r = 18.8208 my_par = 20426.9
param = 0.01515 NK = 1107.56 NBG = 60.4444 r = 18.3235 my_par = 20294.3
param = 0.0141 NK = 1075.89 NBG = 57.1111 r = 18.8385 my_par = 20268.2
param = 0.01305 NK = 1039.67 NBG = 53.3333 r = 19.4938 my_par = 20267
param = 0.01585 NK = 1128 NBG = 63 r = 17.9048 my_par = 20196.6
param = 0.0134 NK = 1049.33 NBG = 54.6667 r = 19.1951 my_par = 20142.1
param = 0.0155 NK = 1116.11 NBG = 61.8889 r = 18.0341 my_par = 20128.1
param = 0.0127 NK = 1021.11 NBG = 51.8889 r = 19.6788 my_par = 20094.2
param = 0.0148 NK = 1093.44 NBG = 59.5556 r = 18.3601 my_par = 20075.7
param = 0.01235 NK = 1008.33 NBG = 50.6667 r = 19.9013 my_par = 20067.2
```

L.cer.asum_c < par



```
param = 1700 NK = 1075.89 NBG = 57.1111 r = 18.8385 my_par = 20268.2
param = 1750 NK = 1074.89 NBG = 57.1111 r = 18.821 my_par = 20230.5
param = 1800 NK = 1074.89 NBG = 57.1111 r = 18.821 my_par = 20230.5
param = 1550 NK = 1075.78 NBG = 57.2222 r = 18.8 my_par = 20224.6
param = 1600 NK = 1075.78 NBG = 57.2222 r = 18.8 my_par = 20224.6
param = 1650 NK = 1075.78 NBG = 57.2222 r = 18.8 my_par = 20224.6
param = 2000 NK = 1070.33 NBG = 56.6667 r = 18.8882 my_par = 20216.7
param = 1850 NK = 1073 NBG = 57 r = 18.8246 my_par = 20198.8
param = 400 NK = 1075.67 NBG = 57.3333 r = 18.7616 my_par = 20181.3
param = 450 NK = 1075.67 NBG = 57.3333 r = 18.7616 my_par = 20181.3
```

T2 parameter summary

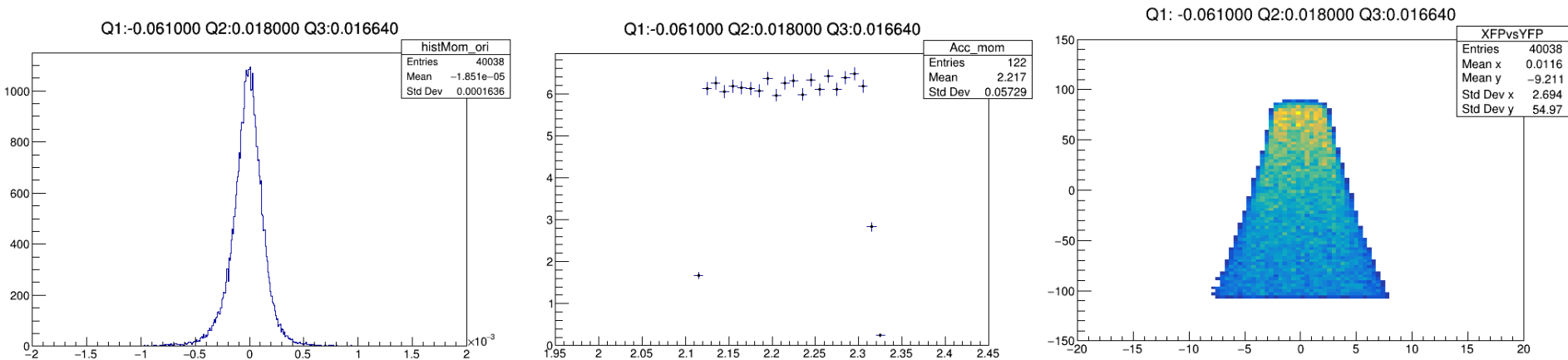
```
TCut c_ctime_min = Form("ctime[0] > %1f", pro_param[0]);
TCut c_ctime_max = Form("ctime[0] < %1f", pro_param[1]);
TCut c_a1_max = Form("R.a1.asum_c[0] < %1f", pro_param[2]);
TCut c_a2_max = Form("R.a2.asum_c[0] < %1f", pro_param[3]);
TCut c_a2_min = Form("R.a2.asum_c[0] > %1f", pro_param[4]);
TCut c_zsum_max = Form("abs(R.tr.vz[0]+L.tr.vz[0])/2. < %1f", pro_param[5]);
TCut c_zsub_max = Form("abs(L.tr.vz[0]-R.tr.vz[0]) < %1f", pro_param[6]);
TCut c_gasche_min = Form("L.cer.asum_c[0] > %1f", pro_param[7]);
TCut c_zsum_min = Form("abs(R.tr.vz[0]+L.tr.vz[0])/2. > %1f", pro_param[8]);
```

```
//////////
double T2_pro_param[9] = { 0, 1, 2, 3, 4, 5, 6, 7, 8 };
double T2_scan_min[9] = {-20, 20, 0.41, 14.65, 4.80, 0.10325, 0.01445, 1700, -1.};
double T2_scan_max[9] = {-20, 0, 0.05, 10.00, 0.00, 0.05000, 0.00500, 0, -1.};
```


geant4 nnl

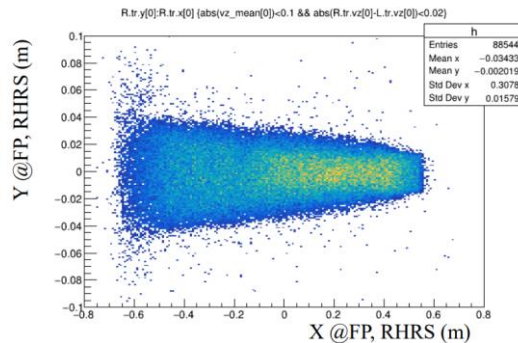
Q1 -0.061, Q2 0.018 is close to real experiment?

woPhysicsQ10.06_0.07Q20.015_0.025Q1col10Q2col18.root (#14)



FWHM $2.32 \cdot 10^{-4}$

FPX vs. FPY (RHRS)



Toshi's slide

Note:

x and y direction are different.

This is Kaon.