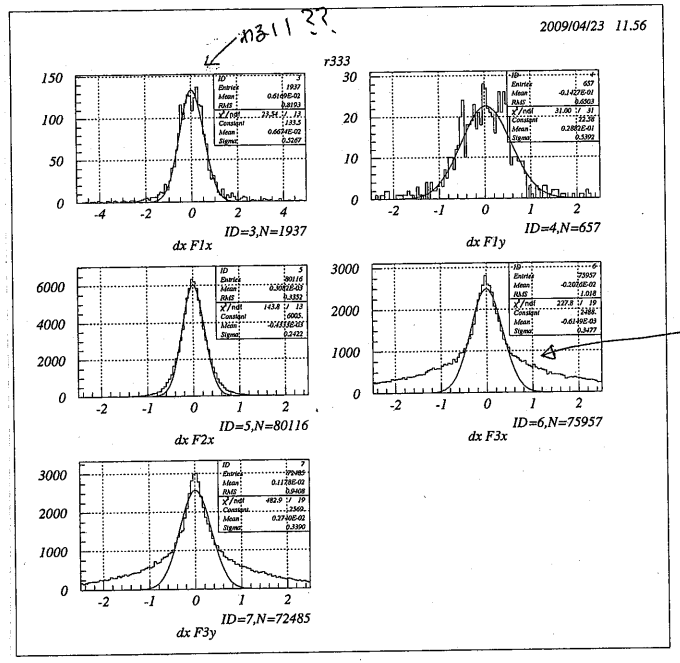

2009/04/23 11.56
r333
ID=3,N=1937
dx F1x
ID=4,N=657
dx F1y
ID=5,N=80116
dx F2x
ID=6,N=75957
dx F3x
ID=7,N=72485
dx F3y

```
c
c------ DCTRACK_DATA.INC ------ data for dc tracking
c                              BDC(box), FDC1K, FDC2, FDC3 for Kappa test, May-2009
c                              5-Apr-2009  Kobayashi
c Coordinate
c   X : -> beam right
c   Y : -> up
c   Z : -> downstream
c
c DC_Plane ------------------------------------------------------------------
c
c   Itype:      1       2       3       4       5       6       7
c   Name:       BDCx    BDCy    FDC1x   FDC1y   FDC2    FDC3x   FDC3y
c   ID_Plane:   1:5     6:10    11:14   15:18   21:24   31:35   36:39
c   #Planes:    5       5       4       4       4       5       4
c
c Z direction in mm : Order=IP ----------------------------------------------
c
      data zpos/      !ZPOS(npl_dc_max)
c   BDC x1:x5, y1:y5, z=0 at downstream side of downstream AL plate
     1  -60.0, -160.0, -260.0, -360.0, -460.0,   !bx1:bx5, bx1 is downstream
     1  -110.0, -210.0, -310.0, -410.0, -510.0,  !by1:by5, by1 is downstream
                                                 !bx1 is closest to the target
c   FDC1K x1:x4, y1:y4, z=0 at downstream side of ???
     1  -255.0, -195.0, -135.0, -75.0,           !f1x1:f1x4
     1  -225.0, -165.0, -105.0, -45.0,           !f1y1:f1y4
     1  2*0.0,                                   !id=19:20(2) empty
c   FDC2(large Hex) x1:x4, z=0 at dowmstream side of AL window frame ?
     1  -112.0, -94.0, -76.0, -58.0,            !f2x1:f2x4, f2x1 is upstream ?
     1  6*0.0,                                   !id=25:30(6) empty
c   FDC3(RIPS DC) x1:x5, y1:y4, z=0 at downstream side of AL plate
     1  -460.0, -360.0, -260.0, -160.0, -60.0,   !f3x1:f3x5, f3x1 is upstream
     1  -410.0, -310.0, -210.0, -110.0/          !f3y1:f3y4, f3y1 is upstream
```

_data.inc

```
c
c Position of wires in the plane [mm]   -------------------------------------
c
      data off_c/               ! OFF_C(3,npl_dc_max)
                                ! pos = p(1)*(iw-p(2))+p(3) [mm]
c   BDCx: x1:x5, x1' x2 x3' x4 x5', x=0 at center
     1  -18.0,4.5,0.0, -18.0,4.0,0.0, -18.0,4.5,0.0,   !bx1:bx3
     1  -18.0,4.0,0.0, -18.0,4.5,0.0,                  !bx4:bx5
c   BDCy: y1:y5, y1' y2 y3' y4 y5', y=0 at center
     1  -18.0,4.5,0.0, -18.0,4.0,0.0, -18.0,4.5,0.0,   !by1:by3
     1  -18.0,4.0,0.0, -18.0,4.5,0.0,                  !by4:by5
c   FDC1Kx: x1:x4
     1  50.0,6.0,0.0, 50.0,6.5,0.0,                    !f1x1:f1x2
     1  50.0,6.5,0.0, 50.0,6.0,0.0,                    !f1x3:f1x4
c   FDC1Ky: y1:y4
     1  50.0,6.0,0.0, 50.0,6.5,0.0,                    !f1y1:f1y2
     1  50.0,6.5,0.0, 50.0,6.0,0.0,                    !f1y3:f1y4
     1  6*0.0,                                         !2 dummy (*3)
c   FDC2x: x1:x4, x1 x2' x3 x4',   x=0 at wire1 on f2x1
     1  21.0,1.0,0.0, 21.0,0.5,0.0,                    !f2x1:f2x2
     1  21.0,1.0,0.0, 21.0,0.5,0.0,                    !f2x3:f2x4
     1  18*0.0,                                        !6 dummy (*3)
c   FDC3x: x1:x5, x1' x2 x3 x4' x5, x=0 at wire1.5 on f3x1
     1  40.0,1.5,0.0, 40.0,1.0,0.0, 40.0,1.0,0.0,      !f3x1:f3x3
     1  40.0,1.5,0.0, 40.0,1.0,0.0,                    !f3x4:f3x5
c   FDC3y: y1 y2' y3' y4, y=0 at center
     1  -40.0,5.5,0.0, -40.0,6.0,0.0,                  !f3y1:f3y2
     1  -40.0,6.0,0.0, -40.0,5.5,0.0/                  !f3y3:f3y4
c
cc Wire Search List ---------------------------------------------------------
c
c #planes in each group
      data NLISTXY/ 5, 5, 4, 4, 4, 5, 4/      !NLISTXY(itype_max)
```

FDC3の配線


```
c
c list of planes in each search type
      data LISTXY_LR/   !LISTXY_LR(npl_xy_max,itype_max)
     1  1, 2, 3, 4, 5,       !Bx
     1  6, 7, 8, 9, 10,      !By
     1  11, 12, 13, 14, 0,   !F1x
     1  15, 16, 17, 18, 0,   !F1y
     1  21, 22, 23, 24, 0,   !F2x
     1  31, 32, 33, 34, 35,  !F3x
     1  36, 37, 38, 39, 0/   !F3y
c
cc LR combinations ----------------------------------------------------------
c
c   dimension is for npl_xy_max=4, 2**npl_xy_max
c      common/ resolve_lr/ lr(npl_xy_max,2**npl_xy_max)
       data lr/     !LR combination
     1 +1,+1,+1,+1,+1, -1,+1,+1,+1,+1, +1,-1,+1,+1,+1, -1,-1,+1,+1,+1,
     1 +1,+1,-1,+1,+1, -1,+1,-1,+1,+1, +1,-1,-1,+1,+1, -1,-1,-1,+1,+1,
     1 +1,+1,+1,-1,+1, -1,+1,+1,-1,+1, +1,-1,+1,-1,+1, -1,-1,+1,-1,+1,
     1 +1,+1,-1,-1,+1, -1,+1,-1,-1,+1, +1,-1,-1,-1,+1, -1,-1,-1,-1,+1,
     1 +1,+1,+1,+1,-1, -1,+1,+1,+1,-1, +1,-1,+1,+1,-1, -1,-1,+1,+1,-1,
     1 +1,+1,-1,+1,-1, -1,+1,-1,+1,-1, +1,-1,-1,+1,-1, -1,-1,-1,+1,-1,
     1 +1,+1,+1,-1,-1, -1,+1,+1,-1,-1, +1,-1,+1,-1,-1, -1,-1,+1,-1,-1,
     1 +1,+1,-1,-1,-1, -1,+1,-1,-1,-1, +1,-1,-1,-1,-1, -1,-1,-1,-1,-1/
!     1  +1,+1,+1,+1, -1,+1,+1,+1, +1,-1,+1,+1, -1,-1,+1,+1,
!     1  +1,+1,-1,+1, -1,+1,-1,+1, +1,-1,-1,+1, -1,-1,-1,+1,
!     1  +1,+1,+1,-1, -1,+1,+1,-1, +1,-1,+1,-1, -1,-1,+1,-1,
!     1  +1,+1,-1,-1, -1,+1,-1,-1, +1,-1,-1,-1, -1,-1,-1,-1/
c
c search list
!       data LISTXY/            !LISTXY(npl_xy_max,list_maxtimes,itype_max)
c
c Default parameters
```

ck_data.inc

```
c
c   Minimum #planes for storing tracks.  minimum 3 planes
      data MIN_TRACK/ 3, 3, 3, 3, 3, 3, 3/      !MIN_TRACK(itype_max)
c
c   chi square limit
      data chi_limit/                 !0.3mm 3*sigma limit
     1  0.9, 1.7, 2.5, 3.3, 4.1, 4.9, 0.,0.,0./
c
c   max deviation in "mm"
      data wire_hit_cut/ npl_dc_max*1.5/                !deviation in mm
c
c   factor for evaluating deviation
      data XFAC/ 1.0/
c
c   tracking "itype"?   1   2   3   4   5   6   7
c                       bx  by  f1x f1y f2x f3x f3y
      data IONOF_TRACK/ 0, 0, 0, 0, 0, 0, 0/    !IONOF_TRACK(itype_max)
c
c   save deviations into analyser output
      data iflag_dev_save/ 1/
c
```

1) Files :

Directory structure :
~/exp/analys/eff

```
        Detector/Particle/*
        bdc
        fdc1
        fdc2
        fdc3
                beta
                n14
```

Data files to be editted during runs:

```
bdc/*/bdc_eff.dat
fdc1/*/fdc1_eff.dat
fdc2/*/fdc2_eff.dat
fdc3/*/fdc3_eff.dat
```

Loop followings:
enter HV values,
paste eff results,

After these loops, convert files to individual data files like :

```
% sh ../../sort_eff02.sh fdc3_eff.dat
```

Then, you can find :
bdcx1.eff bdcx2.eff bdcx3.eff ...

sort_eff02
line (80→130)

Plot files

```
bdc/*/bdc_eff.tdr
fdc1/*/fdc1_eff.tdr
fdc2/*/fdc2_eff.tdr
fdc3/*/fdc3_eff.tdr
```

You have to modify boundaries for x and y axes, which are defined at the very early lines:

```
define value ylim1=-5
define value ylim2=105
define value xlim1=1500
define value xlim2=1900
```

X axis limits should be modified depending on the HV ranges.

In case of beam runs, y limitation will be OK as defaults.
If plateau has not reached to 100 %, you can modify y limits.

All you have to do after boundary modification is :

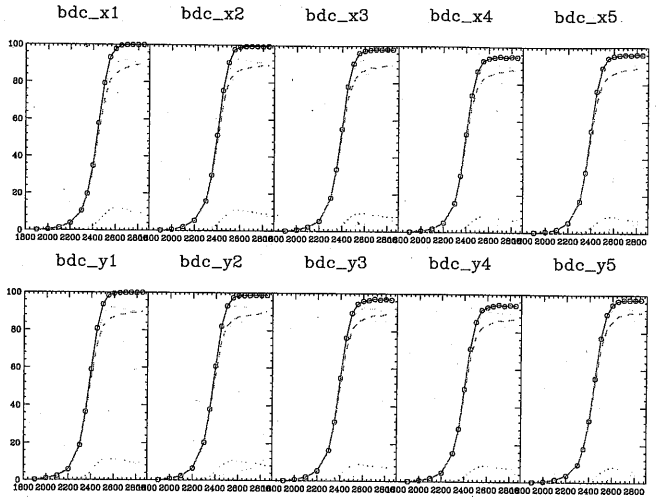
```
% td bdc_eff.tdr
```

Interior the main td file, include commands are used like:

```
define string efffile="fdc3x1.eff"
include eff_skel.tdr
```

In the eff_skel.tdr file, string contained in "efffile" variable is refered several times using "s_efffile".
eff_skel.tdr should be editted if prteff_user output format is changed.
So, you need not modify the include td file.

The eff_skel.tdr file have to be located in the same directory of bdc_eff.tdr or something. So, the file is symbolically linked to each directory.



title top size 2 '
setsymbol 9P size 1
plot blue

```
#!/bin/sh

targ=eff_sfd.dat
if [ -n "$1" ]; then
  targ=$1
fi
#prog=/home/rips/common/analys_util/sort_eff/sort_eff01
prog=/mnt2/common/analysis/sort_eff/sort_eff02

# backup only 1 time for avioding fortran file io error as
# open: 'new' file exists

for i in *.eff
do
  mv $i $i~
done

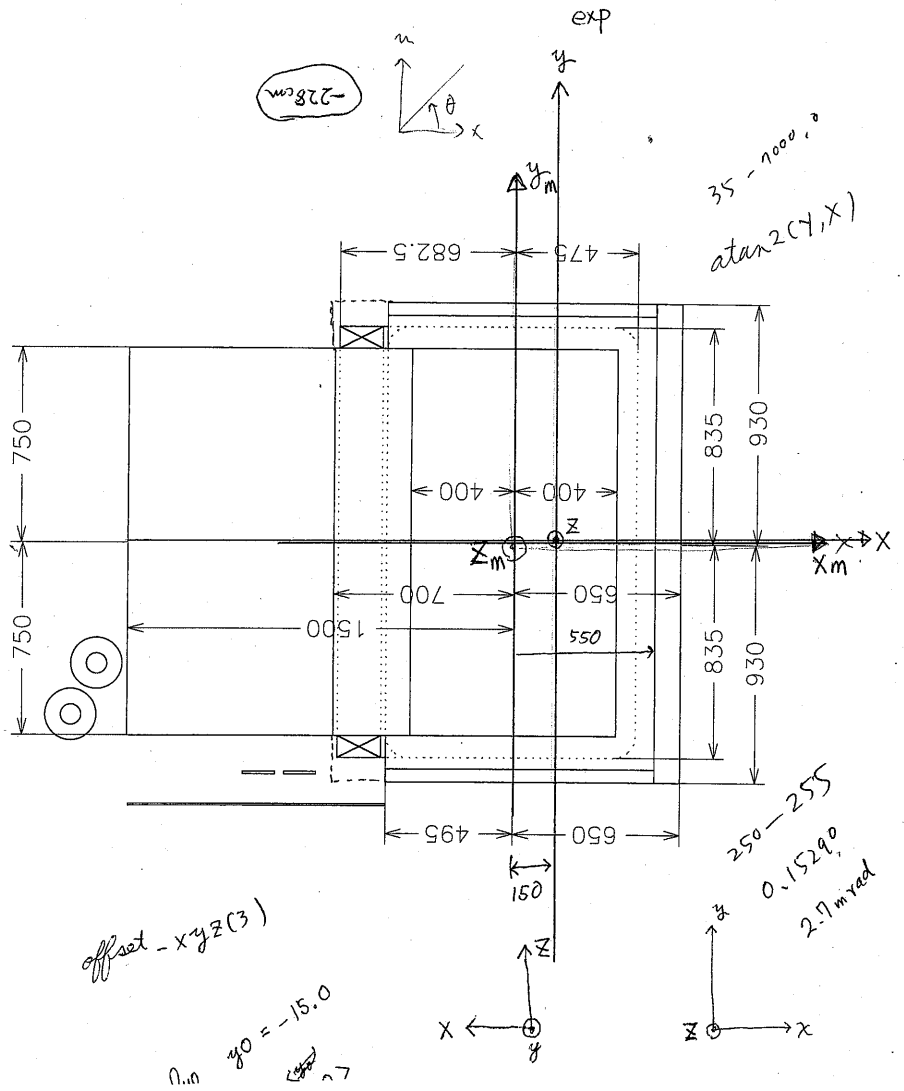
$prog $targ (14)

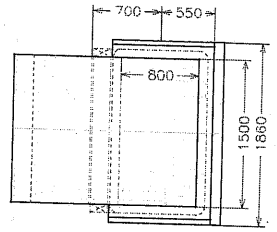
# end of script
```

mac中 /home/comman/sort_eff/sort_eff02

Name : は コメントアウトしなくてよい

HV value
Name - - -
data

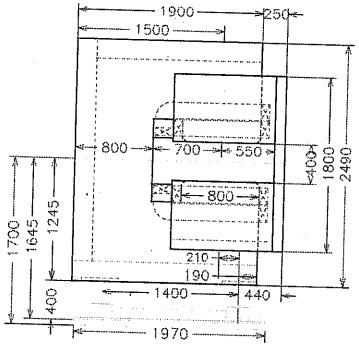


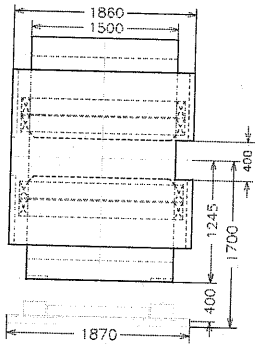


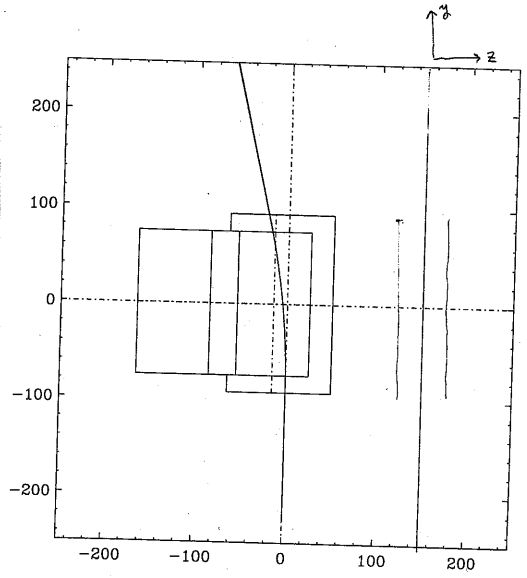
Kappa電磁石(16C830型偏向電磁石)

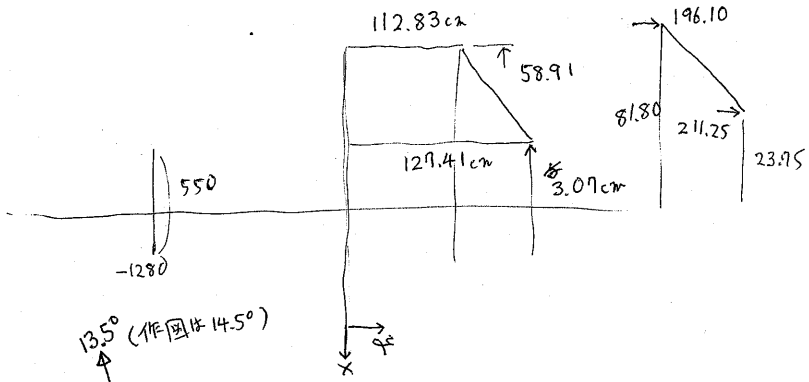
最大磁場：	1.2 T	有効長：	1.8m
BL：	2.2 Tm		
ギャップ：	0.4m		
最大電流：	2300A(1100A)		
巻数	合計200turns		
起磁力：	0.45MAT		
最大電圧	274V	最大消費電力	580kW
重量：	約 54t		
冷却水	圧力14kg/cm2、流量300l/min		

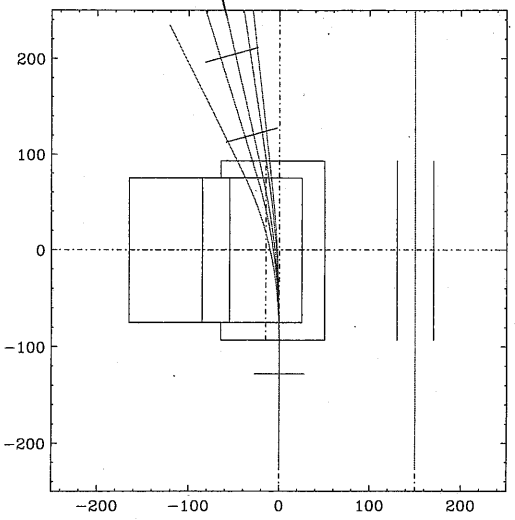
15-Nov-2003/20-Mar-2008 小林











≒50 MeV/A

2,4,13,4,6,8He

$\frac{\Delta T}{T} \simeq 2\frac{\Delta P}{P}$

⇓

135°に寄る

① ガスの check

4/27 20:00 88K He/CH4

② He のこり 35k

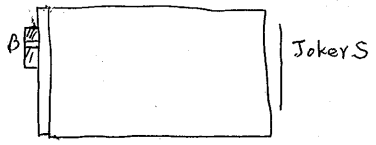
③ beam stopper → 0°付近へ

④ Hodoscope モニター 55

→ 途中の adaper のパリティがまちがっていた → OK. B3で見える
{ LED-scaler
NIM-BIN

⑤ BDC

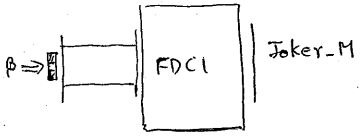
Joker_S



Joker_S	ソースあり	ソースなし
HV=1200V	~500Hz	10~100Hz
1150V	~400Hz	5~20Hz
→ 1100V	~400Hz	5~10Hz
1050V	300~400Hz	10Hz

1100V ?

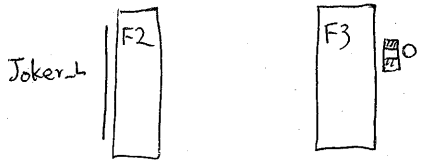
つぎに



	ソースあり	ソースなし	rateメータ (Log)
HV=1200	~~1000~~	50~100Hz	~~40~~
1150	800~900	20~80Hz	30
→ 1100	700~800	6~20Hz	20
1050	700	5~10Hz	15
1000	600~700	5~40Hz ?	~~20~~ 10

両方1100Vでいく.

FDC2/FDC3のテスト? 間に He bag が入った状態. Joker_L ? rate meter linear



HV	ソースあり	なし
650	1000	10~15
700	1200	20~25 ← 725
750	1300	25
800	~~1000~~/1400	40~50
850	1500	>80
900	2200	

一応 β線の data をとる 準備はできた.

◎target 厚/CH2

1mm×1, 2, 3, 4 49mg, (97mg) (193mg) (386mg) あり.

→ わくを1枚 もち帰り.

* 5mmt, 10mmt を作る M8ナベ

↓ -1.5%

↓ -3%

C ~~100mg~~,
110mg, 191mg, 548mg.

13 4/28(木)

β線のテスト

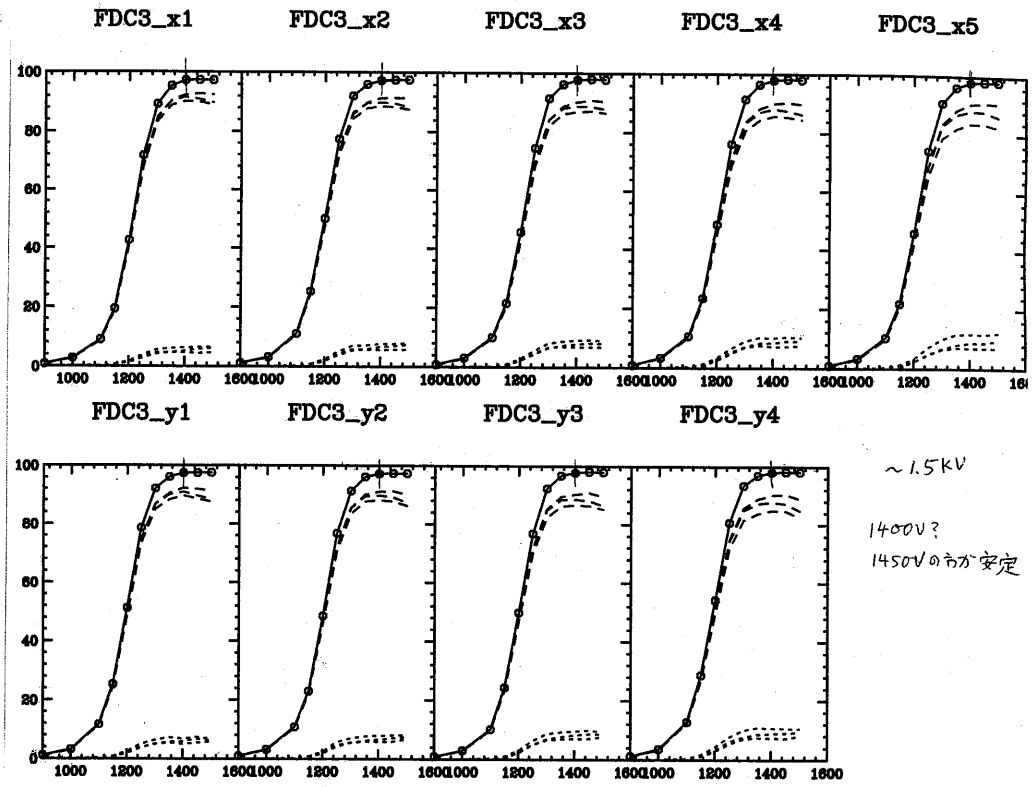
① FDC3 +900～1500V / -2.5kV

② FDC2

まず前の子でやってみる

③ FDC1

④ BDC



～1.5kV

1400V?

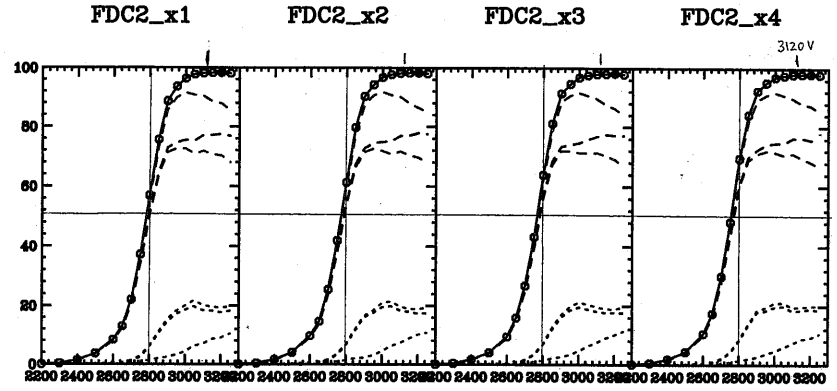
1450Vの方が安定

run 341

+1.4kV/-2.5kV ソース downstream (コリメータ)

トリガ Joker-L, upstream of FDC2

f=0.64 (P10) → 0.627



V_F = 2750V

~~run342~~,

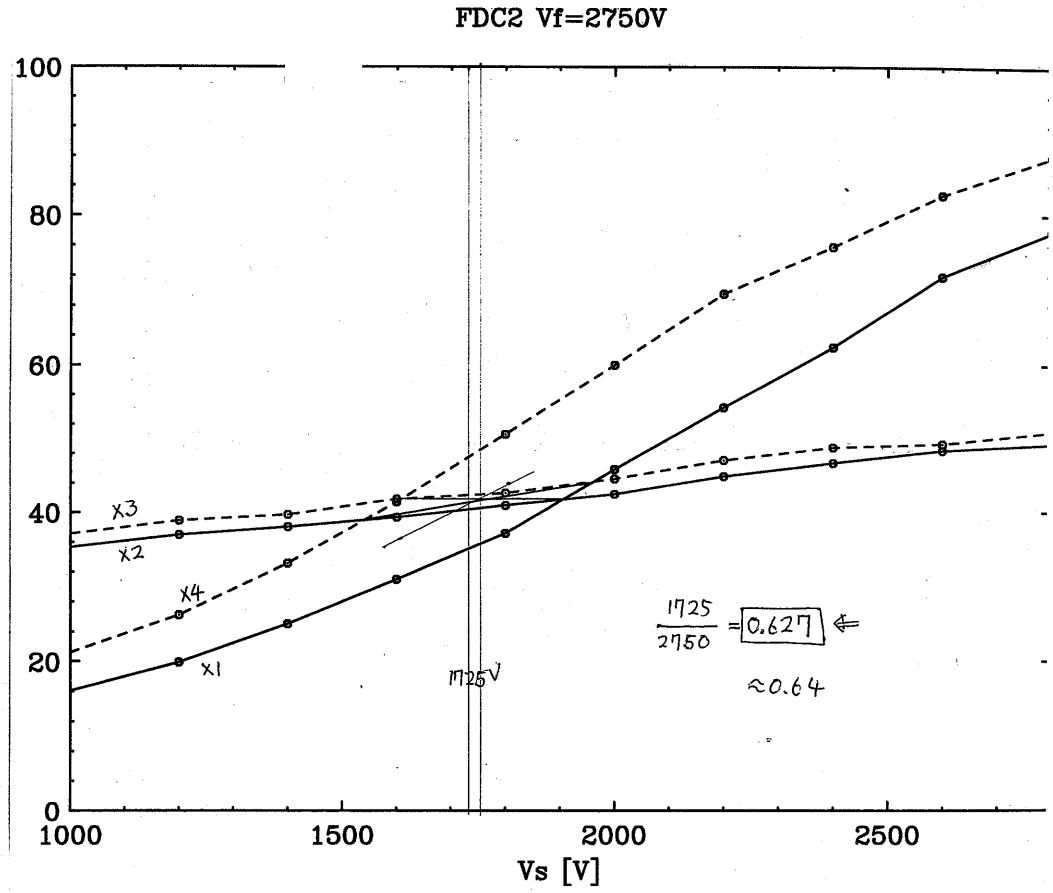
FDC2 β −3100/1944 X scratch

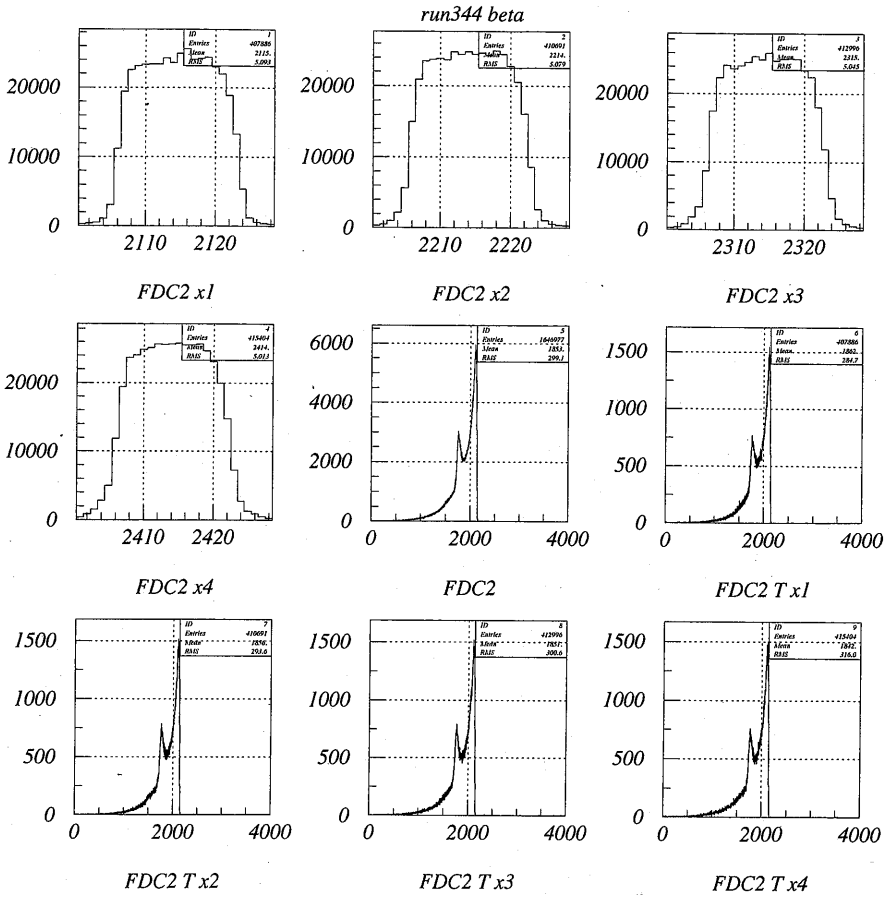
run343,

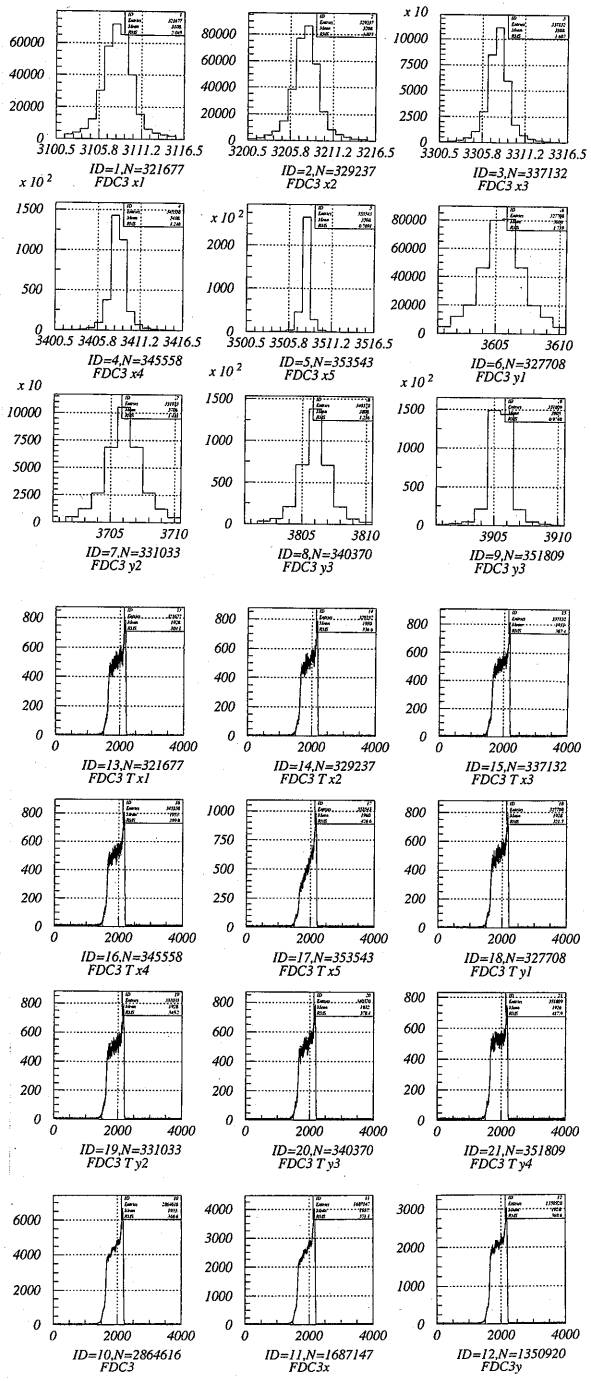
FDC2 β −3100/1944 110 k events

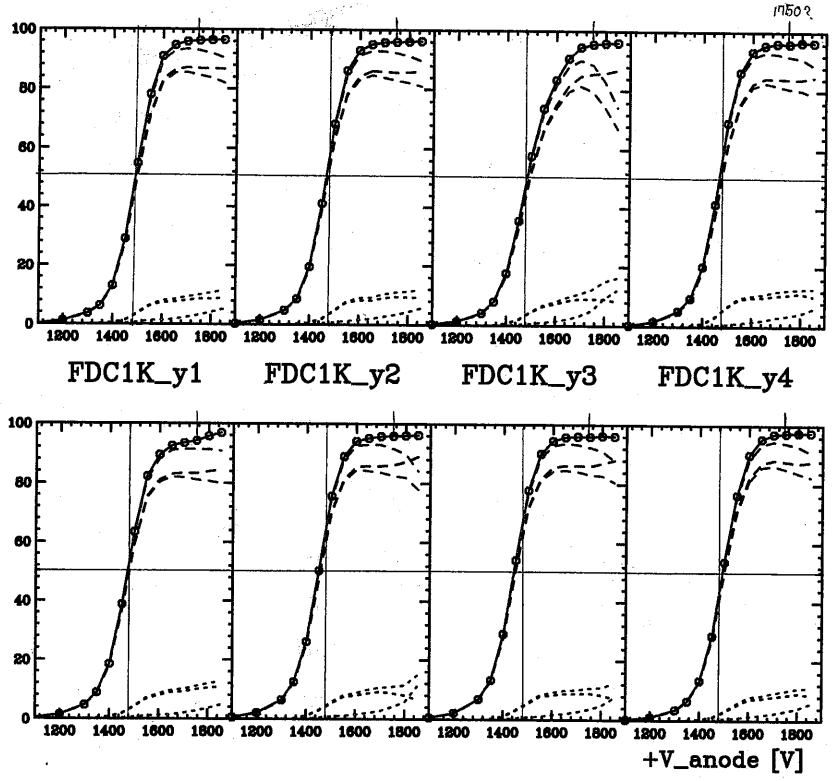
run344

FDC2 β
3

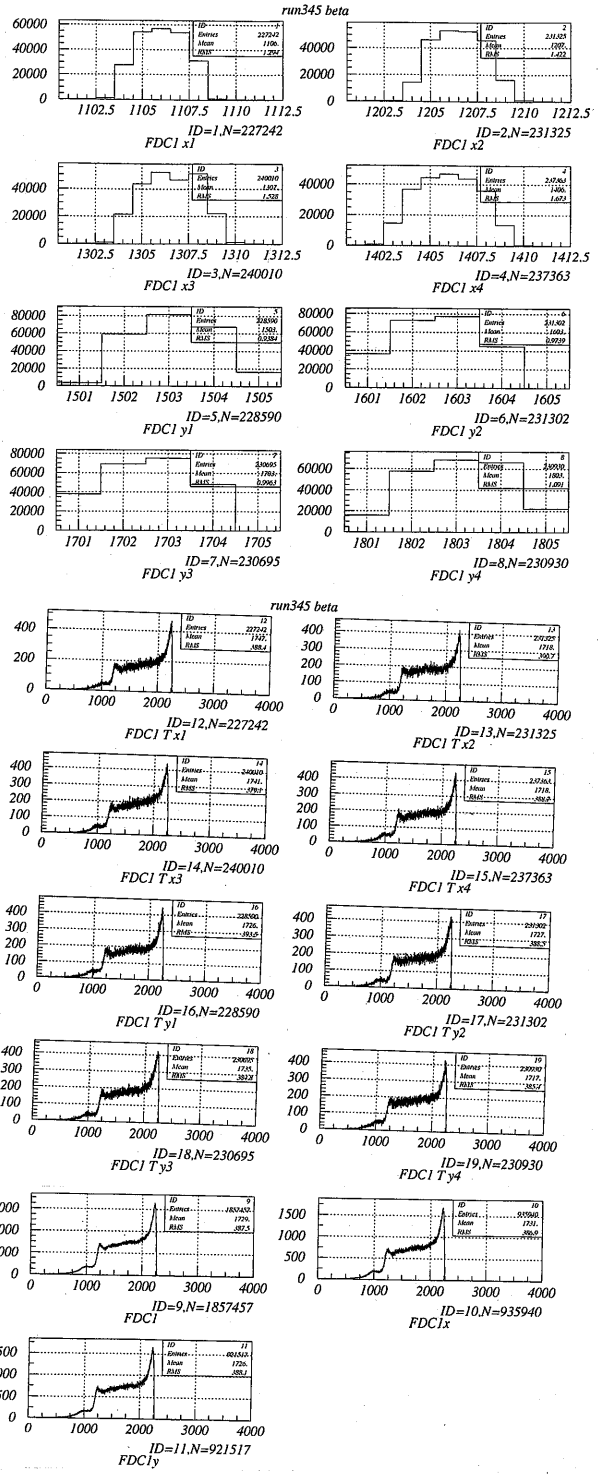


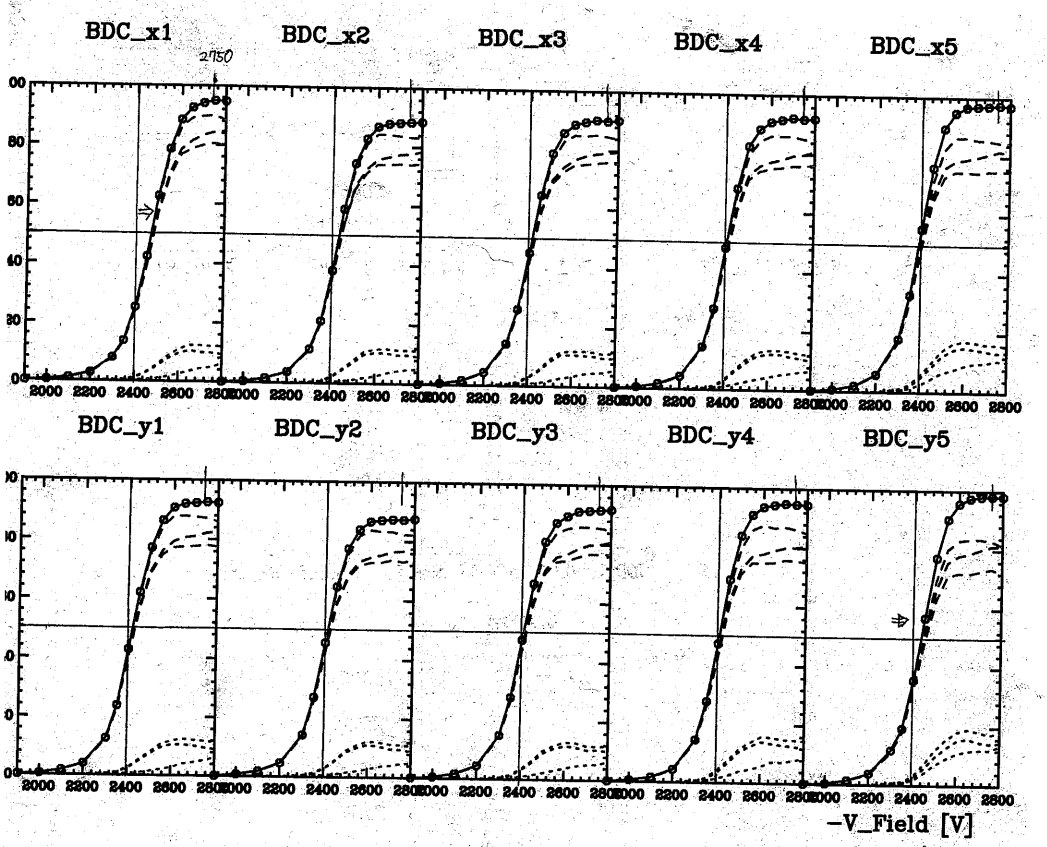

run344 beta
FDC2 x1
FDC2 x2
FDC2 x3
FDC2 x4
FDC2
FDC2 T x1
FDC2 T x2
FDC2 T x3
FDC2 T x4


ID=1,N=321677 FDC3 x1
ID=2,N=329237 FDC3 x2
ID=3,N=337132 FDC3 x3
ID=4,N=345558 FDC3 x4
ID=5,N=353543 FDC3 x5
ID=6,N=327708 FDC3 y1
ID=7,N=331033 FDC3 y2
ID=8,N=340370 FDC3 y3
ID=9,N=351809 FDC3 y3
ID=13,N=321677 FDC3 T x1
ID=14,N=329237 FDC3 T x2
ID=15,N=337132 FDC3 T x3
ID=16,N=345558 FDC3 T x4
ID=17,N=353543 FDC3 T x5
ID=18,N=327708 FDC3 T y1
ID=19,N=331033 FDC3 T y2
ID=20,N=340370 FDC3 T y3
ID=21,N=351809 FDC3 T y4
ID=10,N=2864616 FDC3
ID=11,N=1687147 FDC3x
ID=12,N=1350920 FDC3y



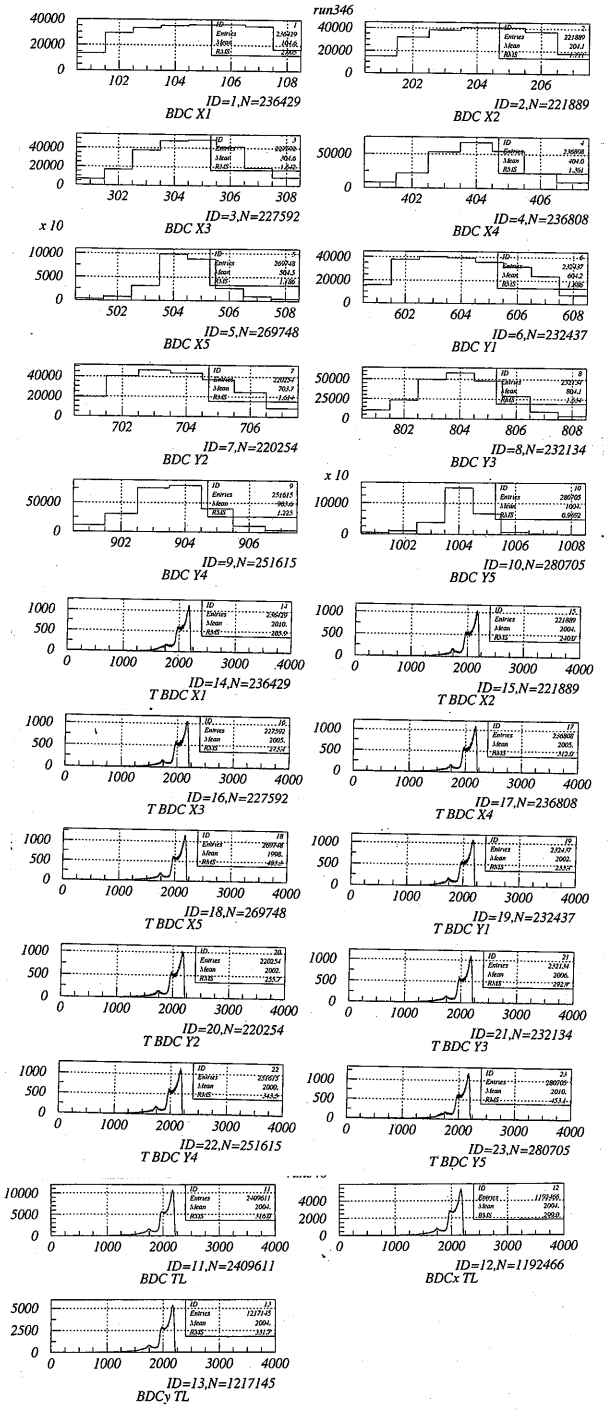
run 345 FDC1 β +1750/-2500 V 200K





run 346, BDC, −2750V, β

ソース上流
トリガー下流



BDCとtarget ✓

kappaと下流架台 ✓

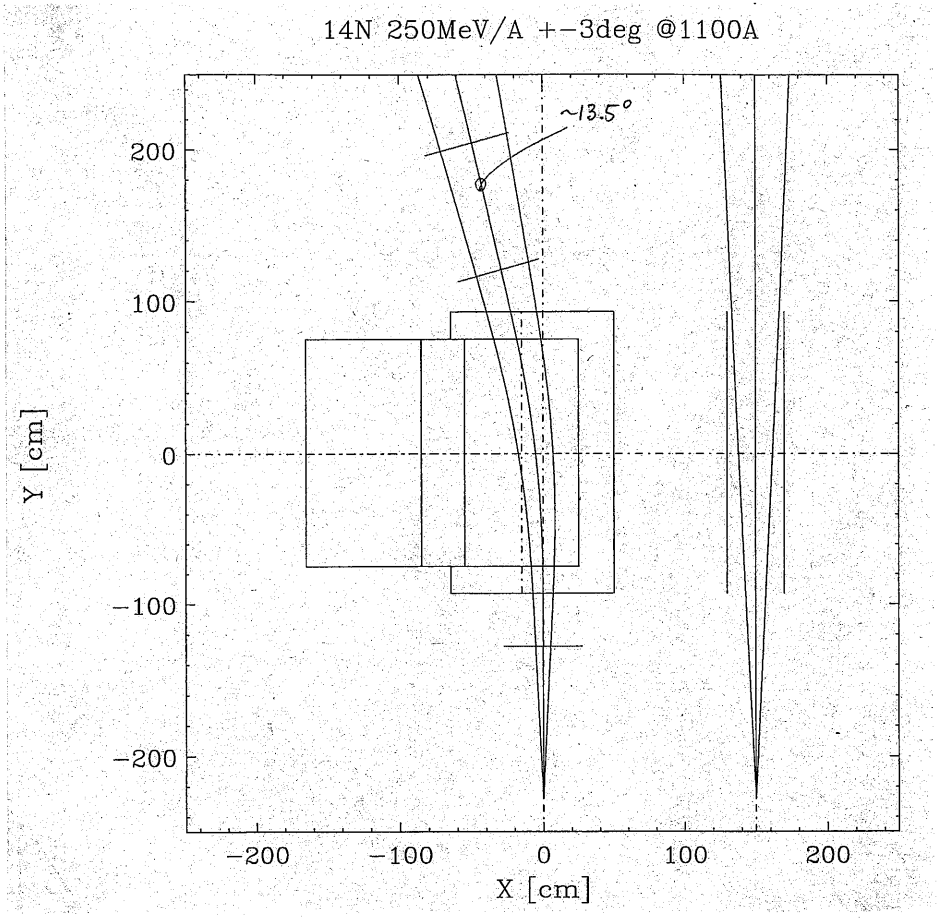
〃 0°

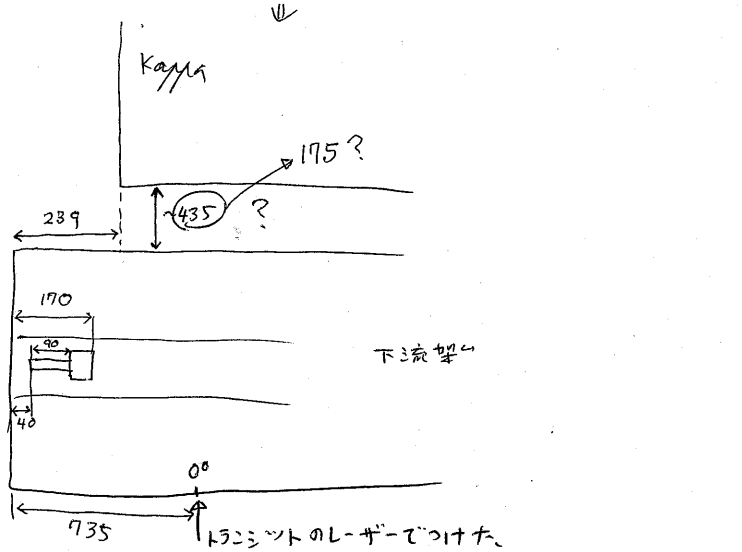
14.5° → 13.5° ✓

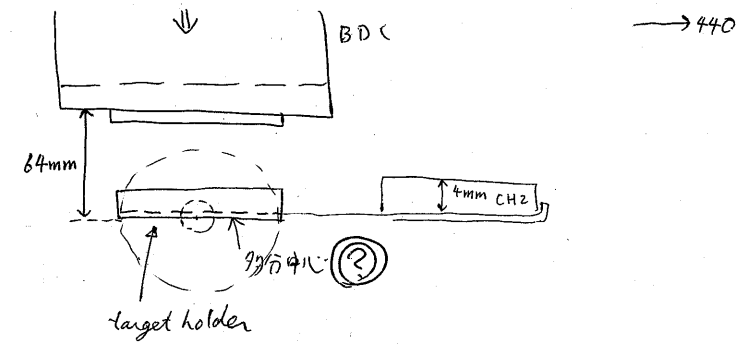
- 4mm CH_2 ✓

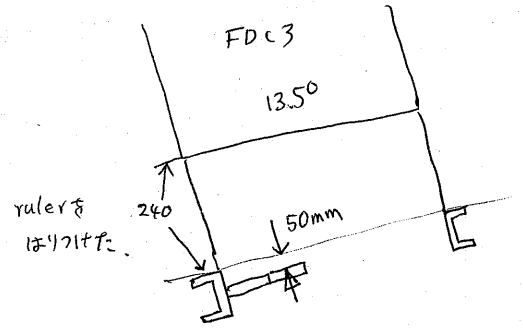
  ±3.9°

- $V_{th} = -4V$









バブラー

メモリ 1　　5.2°C

tank @ 0°　トラニシットの前.

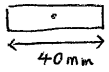
hod　#→1380−α

1730−α　　~10mA
1380−α　　~7mA.

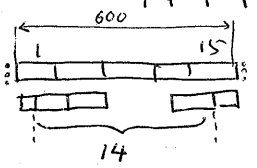
5/2

FDC3 の配置.

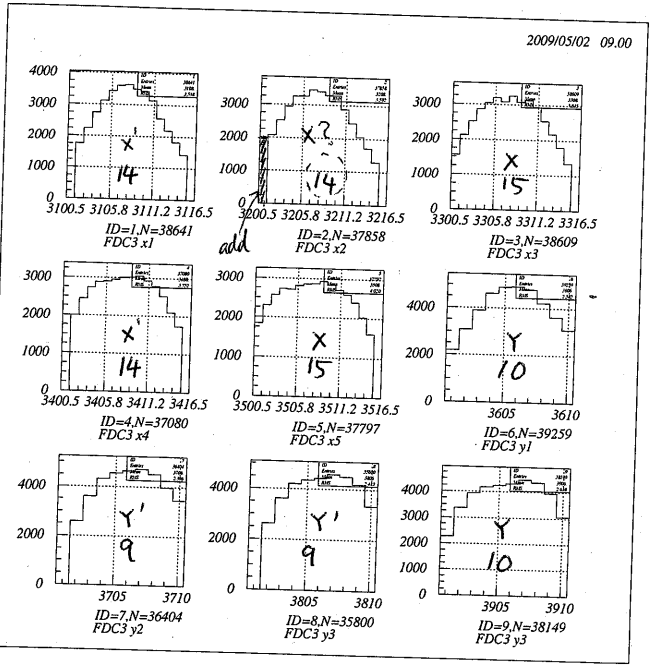
wire mapping を見ると　　X′ X X X′X　　Y Y′Y′Y



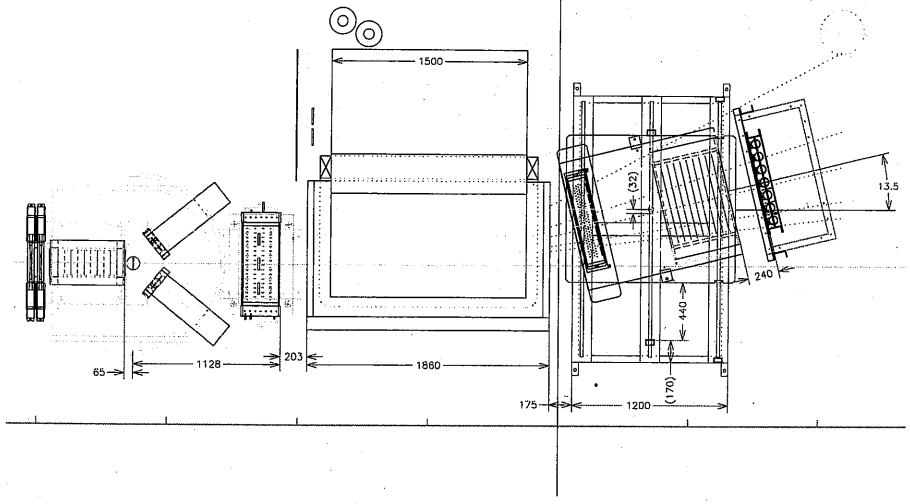
600/40 = 15



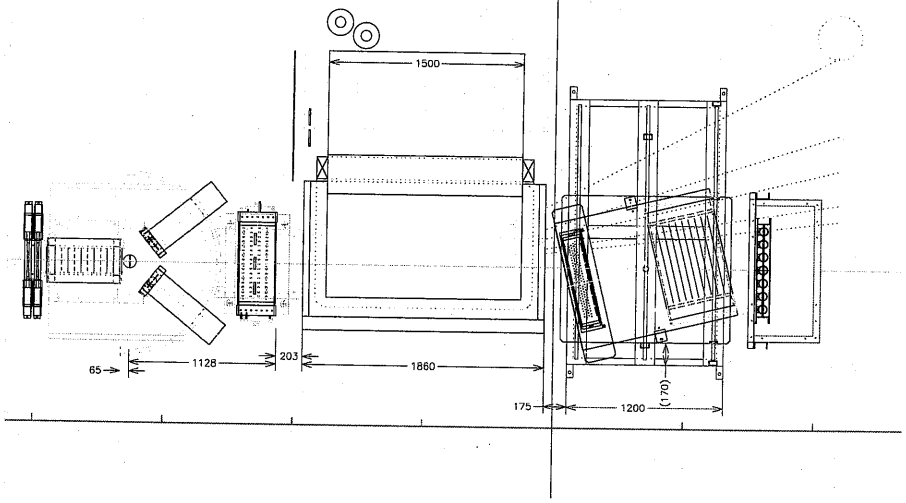
400/40 = 10



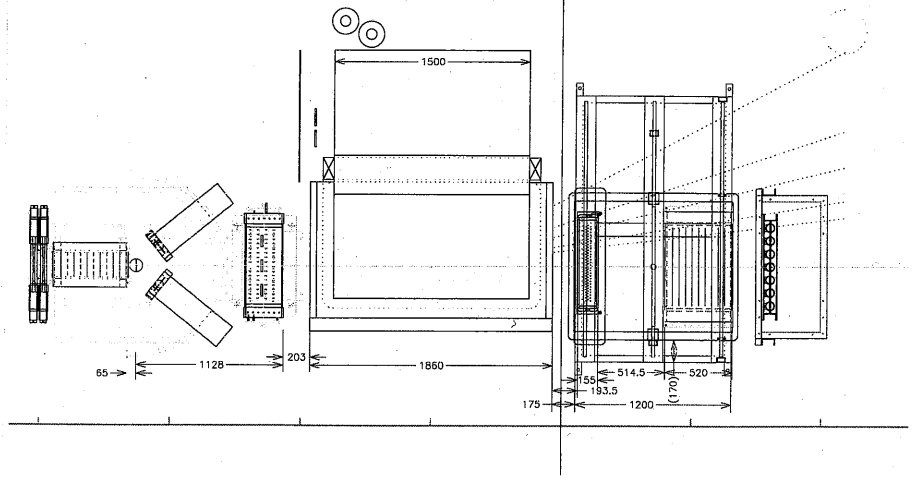
1100A : y=440, ang=13.5



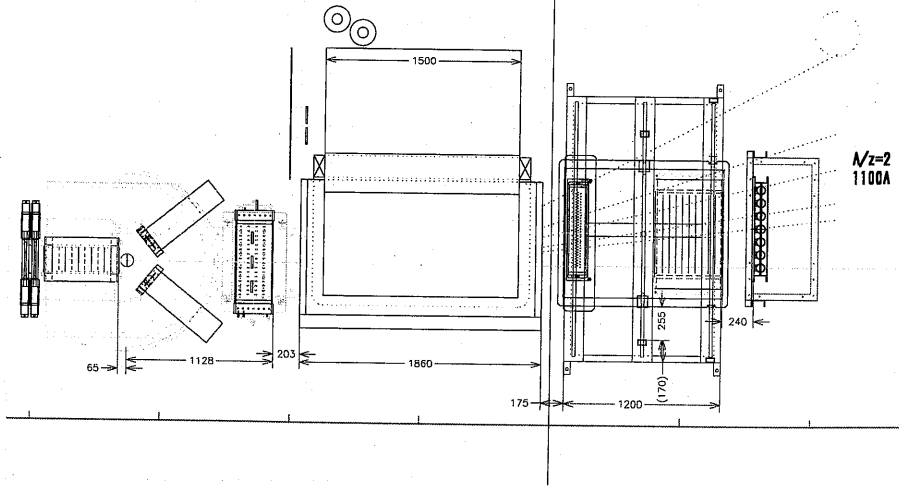
straight : y=0, ang=13.5



Straight : y=0, ang=0



For Sweep : y=255, ang=0



```
c
c FDC3 (RIPS DC): x1-x5(ID=31-35), y1-y4(ID=36-39)
c   9 connectors, 3 blank
c   3 TDC'S (TDC7,8,9)
c   Max. 15 wires for x, 10 wires for y
c   map from r124_n2@RIPS
     1  0,3102,3103,3104,3105,3106,3107,3108, !TDC7-1 F3-x1 X'
     1 3109,3110,3111,3112,3113,3114,3115, 0,
     1  0,3202,3203,3204,3205,3206,3207,3208, !TDC7-2 F3-x2 X
     1 3209,3210,3211,3212,3213,3214,3215,   0,
     1 3301,3302,3303,3304,3305,3306,3307,3308, !TDC7-3 F3-x3 X
     1 3309,3310,3311,3312,3313,3314,3315,   0,
     1  0,3402,3403,3404,3405,3406,3407,3408, !TDC7-4 F3-x4 X'
     1 3409,3410,3411,3412,3413,3414,3415, 0,
     1 3501,3502,3503,3504,3505,3506,3507,3508, !TDC8-5 F3-x5 X
     1 3509,3510,3511,3512,3513,3514,3515,   0,
     1 3601,3602,3603,3604,3605,3606,3607,3608, !TDC8-2 F3-y1 Y
     1 3609,3610,   0,   0,   0,   0,   0,   0,
     1  0,3702,3703,3704,3705,3706,3707,3708, !TDC8-3 F3-y2 Y'
     1 3709,3710, 0,   0,   0,   0,   0,   0,
     1  0,3802,3803,3804,3805,3806,3807,3808, !TDC8-4 F3-y3 Y'
     1 3809,3810, 0,   0,   0,   0,   0,   0,
     1 3901,3902,3903,3904,3905,3906,3907,3908, !TDC9-1 F3-y4 Y
     1 3909,3910,   0,   0,   0,   0,   0,   0,
     1 16*0,                                    !TDC9-2 blank
     1 16*0,                                    !TDC9-3 blank
     1 16*0/                                    !TDC9-4 blank
c
```

```
c Position of wires in the plane
[mm]   ----------------------------------------
c
      data off_c/              ! OFF_C(3,npl_dc_max)
                               ! pos = p(1)*(iw-p(2))+p(3) [mm]
c   BDCx: x1:x5, x1' x2 x3' x4 x5', x=0 at center
     1  -18.0,4.5,0.0, -18.0,4.0,0.0, -18.0,4.5,0.0,   !bx1:bx3
     1  -18.0,4.0,0.0, -18.0,4.5,0.0,                  !bx4:bx5
c   BDCy: y1:y5, y1' y2 y3' y4 y5', y=0 at center
     1  -18.0,4.5,0.0, -18.0,4.0,0.0, -18.0,4.5,0.0,   !by1:by3
     1  -18.0,4.0,0.0, -18.0,4.5,0.0,                  !by4:by5
c   FDC1Ky: x1:x4

      1  50.0,6.0,0.0, 50.0,6.5,0.0,                   !f1x1:f1x2
      1  50.0,6.5,0.0, 50.0,6.0,0.0,                   !f1x3:f1x4
c   FDC1Ky: y1:y4
      1  50.0,6.0,0.0, 50.0,6.5,0.0,                   !f1y1:f1y2
      1  50.0,6.5,0.0, 50.0,6.0,0.0,                   !f1y3:f1y4
      1  6*0.0,                                        !2 dummy (*3)
c   FDC2x: x1:x4, x1 x2' x3 x4',   x=0 at wire1 on f2x1
      1  21.0,1.0,0.0, 21.0,0.5,0.0,                  !f2x1:f2x2
      1  21.0,1.0,0.0, 21.0,0.5,0.0,                  !f2x3:f2x4
      1  18*0.0,                                       !6 dummy (*3)
c   FDC3x: x1:x5, x1' x2 x3 x4' x5, x=0 at wire1.5 on f3x1
      1  40.0,1.5,0.0, 40.0,1.0,0.0, 40.0,1.0,0.0,    !f3x1:f3x3
      1  40.0,1.5,0.0, 40.0,1.0,0.0,                  !f3x4:f3x5
c   FDC3y: y1 y2' y3' y4, y=0 at center
      1  -40.0,5.5,0.0, -40.0,6.0,0.0,                !f3y1:f3y2
      1  -40.0,6.0,0.0, -40.0,5.5,0.0/                !f3y3:f3y4
c
c ....
```

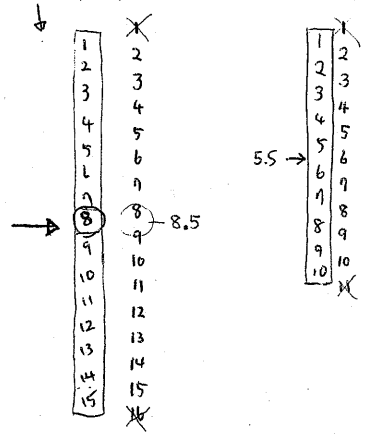
geometrical 中心が中心になるようにする

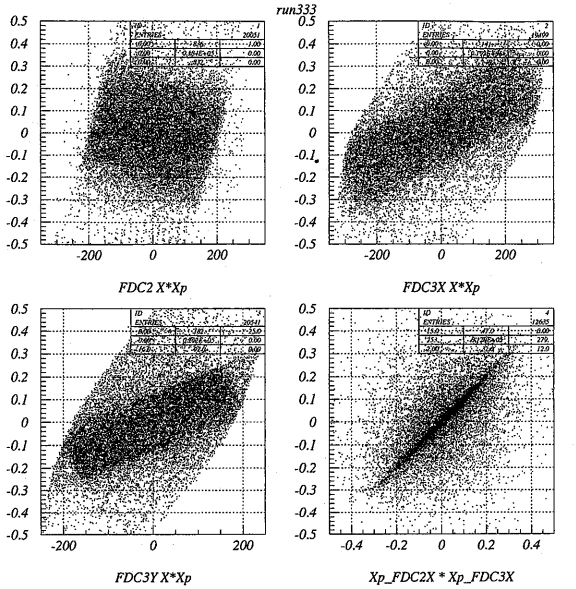
Y=1~10 W5.5が中央

F3X 14, 15, 15, 14, 15 wires　　中心 8.5, 8.8, 8.5, 8.

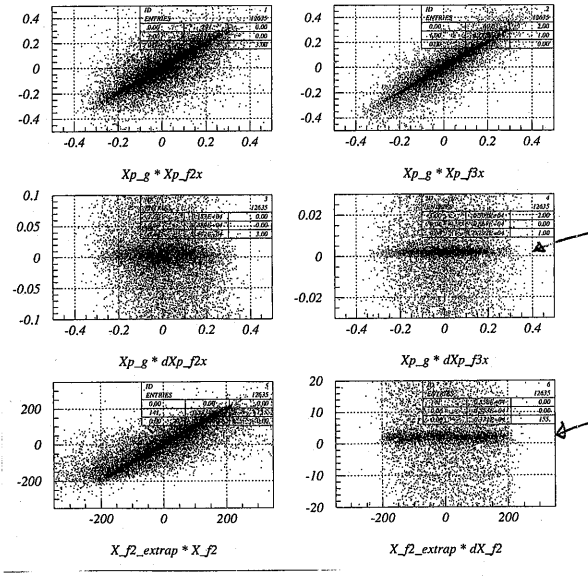
10, 9, 9, 10

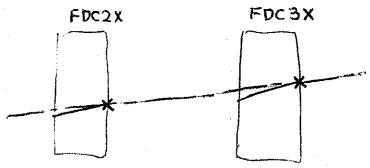
5.5 6 6 5.5,





FDC2/3
それぞれ geometrical center を中





angle <Δθ> = 1.9mrad
σ = 1.4mrad

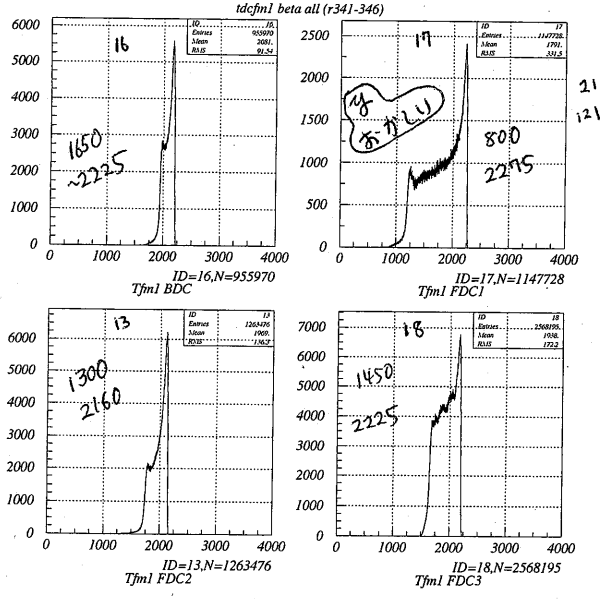
FDC3から FDC2へ引き
offset <Δx> = 2mm
σx = 1.4mm

1000mm × Δθ = 2mm
Δθ ~ 2mrad

ほぼ
あっ

なぜか local の角度が ~2mrad すれている

tdcfm1_beta.hbook → run338用 2009/05/02 21.18



FDC1のtrackingが変。

wireごとのTDCを見た → へんではない。

X 11 12 12 11

Y 5 4 4 5

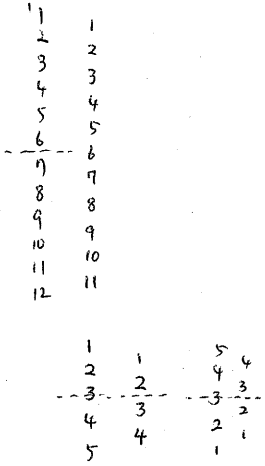
```
c
c FDC1K (FDC2A@HIMAC, KEK-DC): x1-x4(ID=11-14), y1-y4(ID=15-18),
c   3 connectors for X, 1 blank(!)
c   2 connectors for Y, 2 blank
c   2 TDC's (TDC3,4)
c   mod y connection
c   12 wires for X, 5 wires for Y
c
      1 1101,1102,1103,1104,1201,1202,1203,1204, ! N3-1 DC#1 X1c
      1 1301,1302,1303,1304,1401,1402,1403,1404,
      1    0,1105,1106,1107,1205,1206,1207,1208, !   -2 DC#1 X2c
      1 1305,1306,1307,1308,1405,1406,1407,0,
      1 1108,1109,1110,1111,1209,1210,1211,1212, !   -3 DC#1 X3c
      1 1309,1310,1311,1312,1408,1409,1410,1411,
      1 16*0,                                    !   -4 blank
      1 1501,1502,1503,1601,1602,1701,1702,1801, ! N4-1 DC#1 Ydc
      1 1802,   0,   0,   0,   0,   0,   0,   0,
      1    0,1504,1505,1603,1604,1703,1704,1803, ! N4-2 DC#1 Yuc
      1 1804,1805,   0,   0,   0,   0,   0,   0,
      1 16*0,                                    !   -3 blank
      1 16*0,                                    !   -4 blank


c   FDC1Kx: x1:x4
      1  50.0,6.0,0.0, 50.0,6.5,0.0,              !f1x1:f1x2
      1  50.0,6.5,0.0, 50.0,6.0,0.0,              !f1x3:f1x4
c   FDC1Ky: y1:y4
      1  50.0,6.0,0.0, 50.0,6.5,0.0,              !f1y1:f1y2
      1  50.0,6.5,0.0, 50.0,6.0,0.0,              !f1y3:f1y4
      1  6*0.0,                                   !2 dummy (*3)
```

おかしい？

3, 2.5, 2.5, 3 ?

→ OK なおった。



3 2.5 2.5 3

:st DC's with beta source
·Mar-2009
:rigger scintillator=upstream
)eta source=down stream with 6mm phai collimator

)01 BDC -2.7KV, Vth=-0.4V, trig=A*B
)02 FDC3 +1.4/-2.5KV, Vth=-0.4V, trig=joker2
y4 was not connected, bad data
)03 FDC3 +1.4/-2.5KV, Vth=-0.4V, trig=joker2, after fix y4
)04 FDC2 -3.1/-1.98KV, Vth=-0.4V, f=0.64, trig=joker2
)05 FDC1 +1.7/-2.5KV, Vth=-0.4V, trig=joker1

)06 FDC1 +1.7/-2.5KV, Vth=-0.4V, trig=joker1 source upstream

)-Mar-2009
)ker upstream of FDC2, HV=907V + FTA410 + CFD
)D, 1730V-alpha, sigma(u*d)
rigger= joker * HOD, horizontal cosmic ray trigger ?
DC2: -3.1KV/-1.98KV, FDC3=+1.4KV/-2.5KV

)07 horizontal cosmic ray trigger, 21:10 19-Mar-2009 -
8:00 20-Mar-2009, 1548 events
stop for gas bottle change, 2.3K events, 13:40 20-Mar-2009

0-Mar-2009 13:40
change He+60%CH4 bottle to the 2nd one

)08 continue horizontal cosmic ray for FDC2/3, 14:10 20-Mar-2009
9.25 k events

0-Apr-2009
rig=(A+B)*Joker(200*200 after FDC1)
osmic ray trigger?

)09 20:00 10-Apr-2009, trig=(A+B)*Joker(20x20 after FDC1)
9:40 11-Apr-2009, stopped, 36 events in about 12 hours

.1-Apr-2009
joker(400x300x3t) upstream of FDC2, 745V
HOD 1730V-alpha
FDC2/3 at -440mm/14.5deg

)10 trig=Joker(400x300)*HOD(sigmaU*D), FDC2/FDC3, cosmic ray
from 12:15 11-Apr-2009
20:00 11-Apr-2009, stopped, 3475 events

:appa power supply, 0A/OFF

:DC2/3 at 0mm, 0deg

)11 trig=Joker(400x300)*HOD(sigmaU*D), FDC2/FDC3, cosmic ray
from 20:36 11-Apr-2009
7:20 12-Apr-2009 stopped, 4942 events

------ 12-Apr-2009

put dER on the beam line after BDC, put source toward upstream

0312 trig=(A*B)*(dER) beta

BDC tests using beta-ray, triggered by A*B
0313 - 0329

Hodoscope test using 137Cs, trigger=HOD(U*D)
0330 137Cs @H3
0331 137Cs @H5

0332 trig=HOD(U*D)*JokerL, FDC2/3/hod @0deg

addind iso-Alchohol into bubbler

0333 trig=HOD(U*D)*JokerL, FDC2/3/hod @0deg, ← for downstream
15:00-12-Apr-2009 started
11:15 17-Apr-2009 stopped, 51278 events in 5 days

---
keep Joker_L & HOD
add Joker_S upstream of BDC, Joker_M downstream of FDC1
HV=1300V, Vth=-30mV(mon)

0334 trig=Joker_S*Joker_M, BDC*FDC1, cosmic,
start: 15:45 17-Apr-2009 -
stopper at 21:00 17-Apr-2009, 715 events

HV of joker S&M 1300V -> 1200V

0335 trig=JokerS*M, BDC&FDC1, cosmic, HV(J)=1.2KV
22:00 17-Apr-2009,
stoppet at 6:10 18-Apr-2009 , 170 events

---
change gas bottle from #2(18kg left) to #3(114kg)
move joker_S from upstream to downstream of BDC

0336 trig=Joker_S*Joker_L, FDC1(BDC), cosmic
8:00 18-Apr-2009

0337 trig=Joker_S*Joker_L, FDC1(BDC), cosmic
1:37 24-Apr-2009
~ JUNK

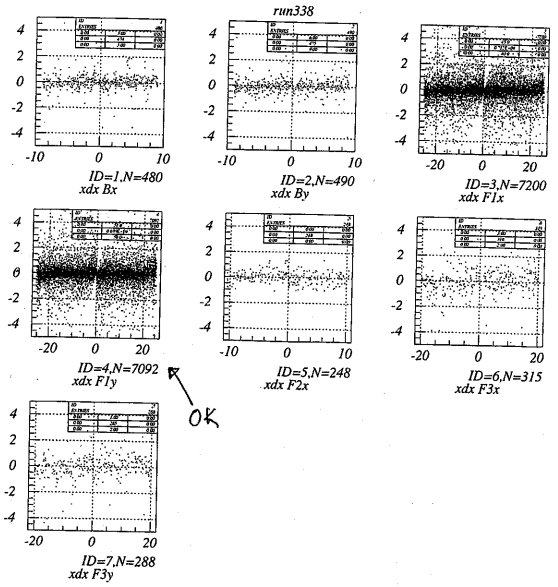
0338 trig=Joker_S*Joker_L, FDC1(BDC), cosmic ← for upstream
4:38 24-Apr-2009

15:51 27-Apr-2009 stop
FDC2 F/S HV tripped.
HV(DC) all off

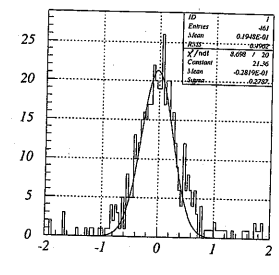
4/27-4/28
for beta tests
Joker_s downstream of BDC, HV=1100V, source from upstream
Joker_M downstream of FDC1, HV=1100V, source from upstream
Joker_L upstream of FDC2, HV=725V, source from downstream

0341 FDC3, beta, +1400/-2500V
0342 scratch
0343 FDC2, beta, -3100/-1944V
0344 FDC2/FDC3, beta +1400/-2500, -3100/-1944V
0345 FDC1K, beta, +1750/-2500V
0346 BDC, beta, -2750V
---

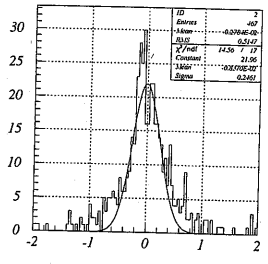
run 344 ~ 346 の β線のTDCを積分



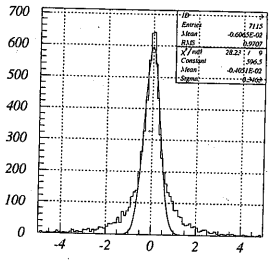
run338



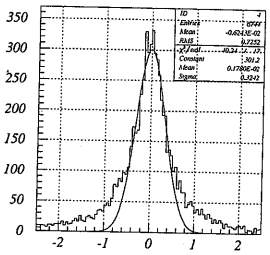
dx Bx



dx By



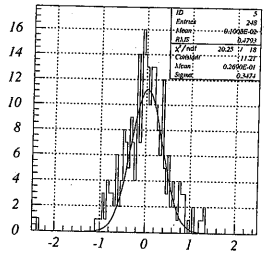
dx F1x



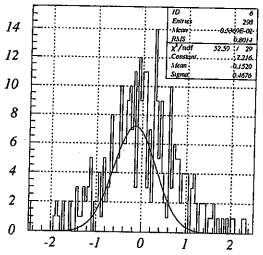
dx F1y

2009/05/03 09.

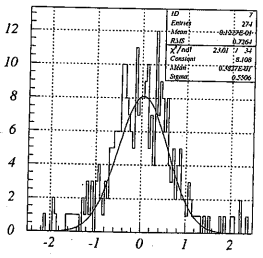
run338



dx F2x



dx F3x



dx F3y

selected fastest hit

4, 5, 6, 8

track gold

track 情報

4, 5, 7, 9

5,4,3 track

track 情報

3, 4, 11

hod

hitpattern

Analyzer の関係

① CH_2 target　5mm, 10mm, 15mm　4一作る.

② HIMACの Log note (新)

③ time calibrator

④ ΔE L/R　1300V, 1250V

BDC　~1800V?

FDC1K　(2500) +1200?

FDC2　?

FDC3　1000V?　→ MC@80MeV は600V　　hodはCは ~1100Vだった.

⑤ Program　MAC → unix　　He4上でかにん ✓

計算器 account.

⑥ Veto用 PMT　3本.
Optical cement (new)　1セット

⑦ beamがふとかった時のcalibration方法.

```
c
c------ analyser.doc ------ Kappa commissioning, 3-May-2009 TK
c
c--- Analyser 1 --- Beam/dE scintillator ------------------------------------------------
c
!   ID:      1      2      3      4
!            F12A   F12B   dEL    dER
!
!   W#:      1      2      3      4      5      6      7      8
!            ID     <T>    <A>    dT     Tl     Tr     Al     Ar
!                   12     13     14
!                   <T>_c  <A>_c  dT_c
c
c--- Analyser 3 --- HOD from FERA/TFC+FERA ----------------------------------------------
c
c       ID:     1:7     Hodoscope
c
c       Word#:  1       2       3       4       5       6       7       8
c               ID      <T>     <A>_cal dT ·    T_r     T_l     A_r     A_l
c
c               9       10      11      12      13      14      15      16
c               XfromA  sqrt(A) Z
c
c--- Analyser 4 --- raw TDC -------------------------------------------------------------
c
c Plane_ID
c    1     2     3     4     5     6     7     8     9     10
c    Bx1   Bx2   Bx3   Bx4   Bx5   By1   By2   By3   By4   By5   : 8(X), 8(Y)
c
c    11    12    13    14    15    16    17    18
c    F1x1  F1x2  F1x3  F1x4  F1y1  F1y2  F1y3  F1y4    : 12(X), 5(Y)
c

c    21    22    23    24
c    F2x1  F2X2  F2x3  f2x4  : 28(X)
c
x    31    32    33    34    35    36    37    38    39
c    F3x1  F3x2  F3x3  F3x4  F3x5  F3y1  F3y2  F3y3  F3y4  : 15(X), 10(Y)
c
c Wire_ID: = 100*ID_plane + IW
c
c     IW       1     2           3             4
c              ID    TDC(rising)  TDC(trailing) Edge(1:L,2:T,3:LT)
c     IW       5       6           7
c              dT(L-T)  wire order  plane order
c statistics
c     ID=9991  w1(ID), w2(total word count)
c     ID=9992  w1(id), w2...w10(m_mod1, m_mod2,...,m_mod10)
c
c--- Analyser 5 --- fastest TDC in one wire ---------------------------------------------
c
c  ID=100*IP+IW:  TDC(W2), X(W3)
c
c  ID=IP : Wire_multipliciry/plane (W2)
c
c--- Analyser 6 --- track golden events -------------------------------------------------
c
c  track summary  :  y= a + b*z
c                                  Bx  By  F1x F1y F2x F3x F3y
c     id= 10*itype(1:7)+itr(1)     !11, 21, 31, 41, 51, 61, 71
c
c     w#:   2       3       4       5       6       7
c           a       b(x')   #planes chisq   -1000   #good track
c
c  redidue

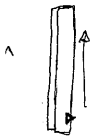
c     id= 100*itr(1) + ip(1:39)     !101,102,103... for 1st track for plane:1,2,3
c
c     w#:   2       3       4       5       6       7
c           iw      x       dx      tdc     x_cell  z
c
c--- Analyser 7 --- track m1 & fastest hits ---------------------------------------------
c
c outout format is the same as analyser 6
c
```

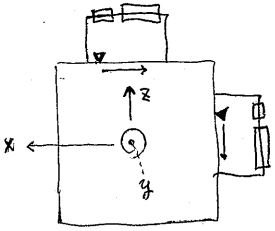


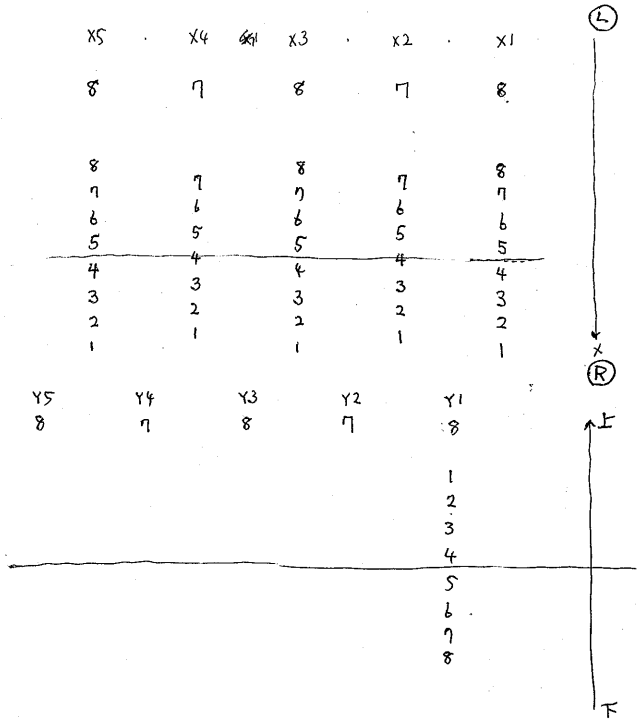
```
c
c--- Analyser 8 --- combine golden track events -----------------------------------------
c
c upstream track_X: Bx(1), F1x(3)
      val(1,naok)= 11       !id=11 upstream(X)
      val(2,naok)= xt       !x_target
      val(3,naok)= xp_tf1   !Angle_after_target(X)
      val(4,naok)= sxp_up   !Scattering_Angle_upstream(X)
      val(5,naok)= xp_upg   !upstream incident angle (global)
      val(6,naok)= vali(3,iok(1))-xp_upg  !xp(Bx)-xp(global)
      val(7,naok)= vali(3,iok(3))-xp_upg  !xp(F1x)-xp(global)
c
c upstream track_Y: By(2), F1y(4)
      val(1,naok)= 12       !id=12 upstream(Y)
      val(2,naok)= yt       !y_target
      val(3,naok)= yp_tf1   !Angle_after_target(Y)
      val(4,naok)= syp_up   !Scattering_Angle_upstream(Y)
      val(5,naok)= yp_upg   !upstream incident angle (global)
      val(6,naok)= vali(3,iok(2))-yp_upg  !yp(By)-yp(global)
      val(7,naok)= vali(3,iok(4))-yp_upg  !yp(F1y)-yp(global)
c
c downstream X: F2x(5), F3x(6)
      val(1,naok)= 13       !id=13
      val(2,naok)= xp_dng   !xp(F2X-F3X) global downstream angle

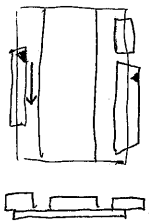


      val(3,naok)= dxp2     !xp(F2x)-xp(F2x-F3x)
      val(4,naok)= dxp3     !xp(F3x)-xp(F2x-F3x)
      val(5,naok)= x_f2c    !extrapolate F3X track to F2X
      val(6,naok)= dx_f2    !extrapolation difference
c
c horizontal bending angle
      val(1,naok)= 14
      val(2,naok)= xp_dng-xp_tf1  !bending angle (w target scattering)
      val(3,naok)= xp_dng-xp_upg  !bending angle (w/o target scattering)
      ang2= angle_offset/rad_to_deg-val(2,naok)  !bending angle in rad
      ang3= angle_offset/rad_to_deg-val(3,naok)  !bending angle in rad
         val(4,naok)= 0.3*bl*1000.0/ang2  !R [MeV/c]
         val(5,naok)= 0.3*bl*1000.0/ang3  !R [MeV/c]
c
c vertical bending angle
      val(1,naok)= 15
      val(2,naok)= yp_dng-yp_upg  !vertical scattering angle (w/o target scattering)
      val(3,naok)= yp_tf1-yp_dng  !vertical angle difference
c
c--- Analyser 9 --- combine track events ------------------------------------------------
c
c--- analyser 11 --- print DC/HOD hits --------------------------------------------------
c
```







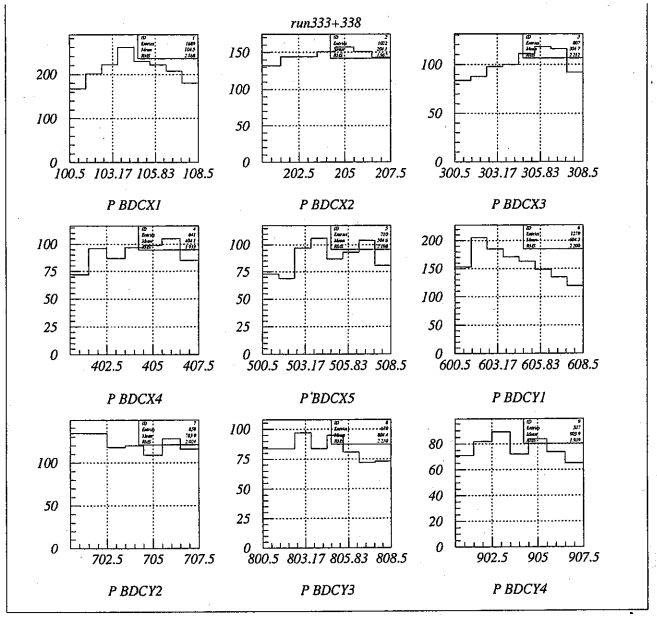


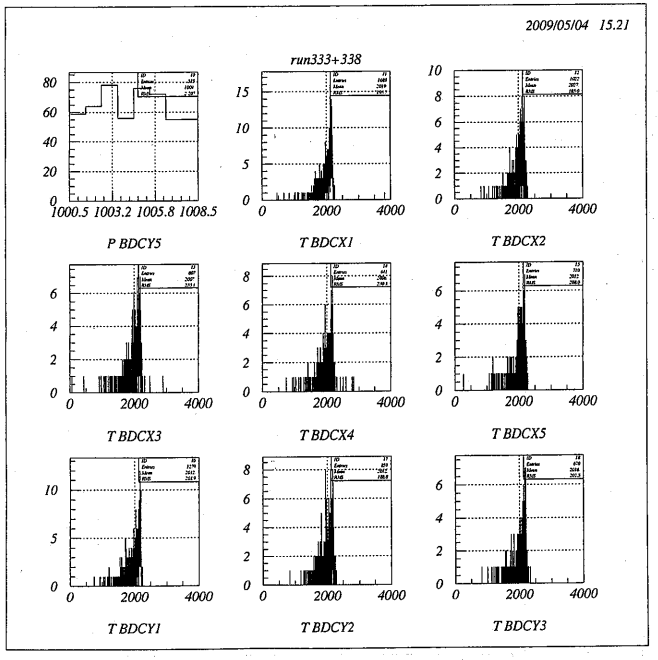
パーツ1周りが3見て.

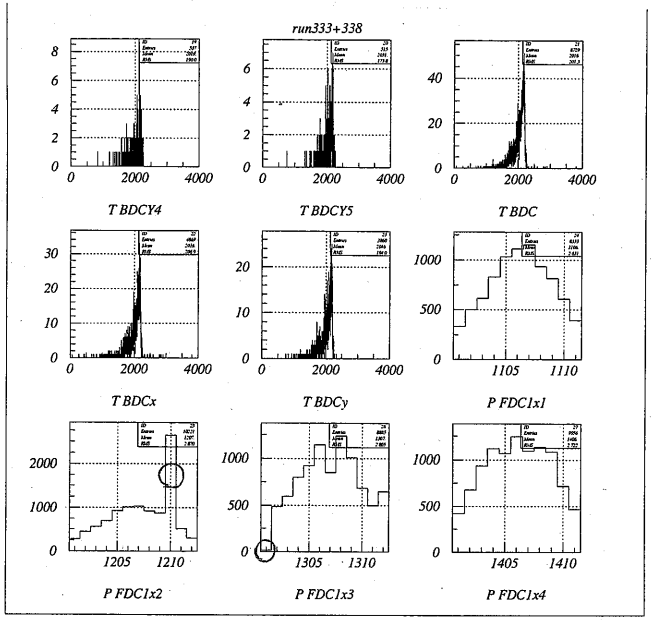
```
c
c       eff_dcall.ana
c
analys
1
!3
4
c
eff
0
c
c------ BDC ------
hst1
0, 4,  101,  108,1, 8, 100.5,  108.5, "P BDCX1"
0, 4,  201,  207,1, 7, 200.5,  207.5, "P BDCX2"
0, 4,  301,  308,1, 8, 300.5,  308.5, "P BDCX3"
0, 4,  401,  407,1, 7, 400.5,  407.5, "P BDCX4"
0, 4,  501,  508,1, 8, 500.5,  508.5, "P BDCX5"
0, 4,  601,  608,1, 8, 600.5,  608.5, "P BDCY1"
0, 4,  701,  707,1, 7, 700.5,  707.5, "P BDCY2"
0, 4,  801,  808,1, 8, 800.5,  808.5, "P BDCY3"
0, 4,  901,  907,1, 7, 900.5,  907.5, "P BDCY4"
0, 4, 1001, 1008,1, 8,1000.5, 1008.5, "P BDCY5"
c
0, 4,  101,  108,2, 4000,0,4000, "T BDCX1"
0, 4,  201,  207,2, 4000,0,4000, "T BDCX2"
0, 4,  301,  308,2, 4000,0,4000, "T BDCX3"
0, 4,  401,  407,2, 4000,0,4000, "T BDCX4"
0, 4,  501,  508,2, 4000,0,4000, "T BDCX5"
0, 4,  601,  608,2, 4000,0,4000, "T BDCY1"
0, 4,  701,  707,2, 4000,0,4000, "T BDCY2"
0, 4,  801,  808,2, 4000,0,4000, "T BDCY3"
0, 4,  901,  907,2, 4000,0,4000, "T BDCY4"
0, 4, 1001, 1008,2, 4000,0,4000, "T BDCY5"
c
0, 4, 101, 1008,2, 4000,0,4000, "T BDC"
0, 4, 101,  508,2, 4000,0,4000, "T BDCx"
0, 4, 601, 1008,2, 4000,0,4000, "T BDCy"
c
c------ FDC1 ------
c
hst1
0, 4,1101,1111,1, 11, 1100.5, 1111.5,"P FDC1x1"
0, 4,1201,1212,1, 12, 1200.5, 1212.5,"P FDC1x2"
0, 4,1301,1312,1, 12, 1300.5, 1312.5,"P FDC1x3"
0, 4,1401,1411,1, 11, 1400.5, 1411.5,"P FDC1x4"
0, 4,1501,1505,1,  5, 1500.5, 1505.5,"P FDC1y1"
0, 4,1601,1604,1,  4, 1600.5, 1604.5,"P FDC1y2"
0, 4,1701,1704,1,  4, 1700.5, 1704.5,"P FDC1y3"
0, 4,1801,1805,1,  5, 1800.5, 1805.5,"P FDC1y4"
c
0, 4,1101,1112,2, 4000,0,4000,"T FDC1x1"
0, 4,1201,1212,2, 4000,0,4000,"T FDC1x2"
0, 4,1301,1312,2, 4000,0,4000,"T FDC1x3"
0, 4,1401,1412,2, 4000,0,4000,"T FDC1x4"
0, 4,1501,1505,2, 4000,0,4000,"T FDC1y1"
0, 4,1601,1605,2, 4000,0,4000,"T FDC1y2"
0, 4,1701,1705,2, 4000,0,4000,"T FDC1y3"
0, 4,1801,1805,2, 4000,0,4000,"T FDC1y4"
c
0, 4,1101,1805,2, 4000,0,4000,"T FDC1"
0, 4,1101,1412,2, 4000,0,4000,"T FDC1x"
0, 4,1501,1805,2, 4000,0,4000,"T FDC1y"
c
c------ FDC2 ------
c
hst1
0, 4,2101,2128,1, 28, 2100.5, 2128.5,"P FDC2x1"
0, 4,2201,2228,1, 28, 2200.5, 2228.5,"P FDC2x2"
0, 4,2301,2328,1, 28, 2300.5, 2328.5,"P FDC2x3"
0, 4,2401,2428,1, 28, 2400.5, 2428.5,"P FDC2x4"
c
0, 4,2101,2128,2, 4000,0,4000,"T FDC2x1"
0, 4,2201,2228,2, 4000,0,4000,"T FDC2x2"
0, 4,2301,2328,2, 4000,0,4000,"T FDC2x3"
0, 4,2401,2428,2, 4000,0,4000,"T FDC2x4"
c
0, 4,2101,2428,2, 4000,0,4000,"T FDC2"
c
c------ FDC3 ------
hst1
0, 4,3101,3116,1, 14, 3101.5, 3115.5,"P FDC3x1"
0, 4,3201,3216,1, 15, 3200.5, 3215.5,"P FDC3x2"
0, 4,3301,3316,1, 15, 3300.5, 3315.5,"P FDC3x3"
0, 4,3401,3416,1, 14, 3401.5, 3415.5,"P FDC3x4"
0, 4,3501,3516,1, 15, 3500.5, 3515.5,"P FDC3x5"
0, 4,3601,3610,1, 10, 3600.5, 3610.5,"P FDC3y1"
0, 4,3701,3710,1,  9, 3701.5, 3710.5,"P FDC3y2"
0, 4,3801,3810,1,  9, 3801.5, 3810.5,"P FDC3y3"
0, 4,3901,3910,1, 10, 3900.5, 3910.5,"P FDC3y4"
c
0, 4,3101,3116,2, 4000,0,4000,"T FDC3x1"
0, 4,3201,3216,2, 4000,0,4000,"T FDC3x2"
0, 4,3301,3316,2, 4000,0,4000,"T FDC3x3"
0, 4,3401,3416,2, 4000,0,4000,"T FDC3x4"
0, 4,3501,3516,2, 4000,0,4000,"T FDC3x5"
0, 4,3601,3610,2, 4000,0,4000,"T FDC3y1"
0, 4,3701,3710,2, 4000,0,4000,"T FDC3y2"
0, 4,3801,3810,2, 4000,0,4000,"T FDC3y3"
0, 4,3901,3910,2, 4000,0,4000,"T FDC3y4"
c
0, 4,3101,3905,2, 4000,0,4000,"T FDC3"
0, 4,3101,3516,2, 4000,0,4000,"T FDC3x"
0, 4,3601,3910,2, 4000,0,4000,"T FDC3y"
c
exit
```

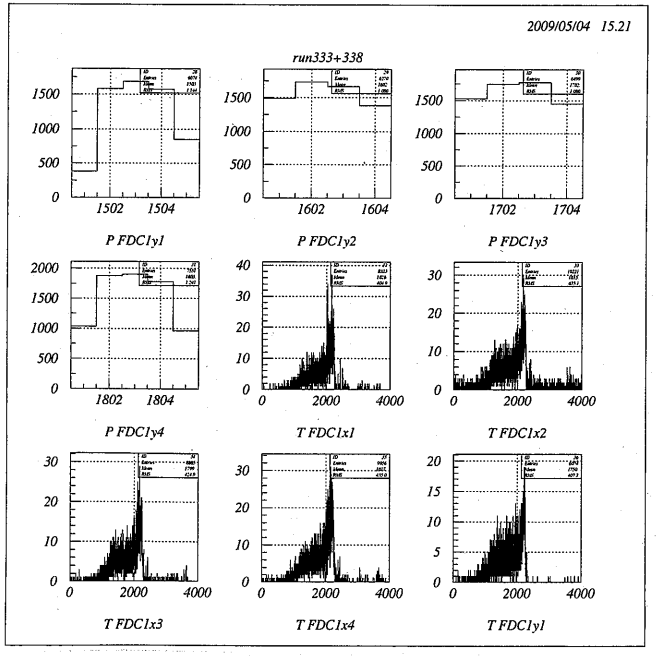
2~15(14)
1~15(15)
1~15(15)
2~15(14)
1~15(15)
1~10(10)
2~10(9)
2~10(9)
1~10(10)

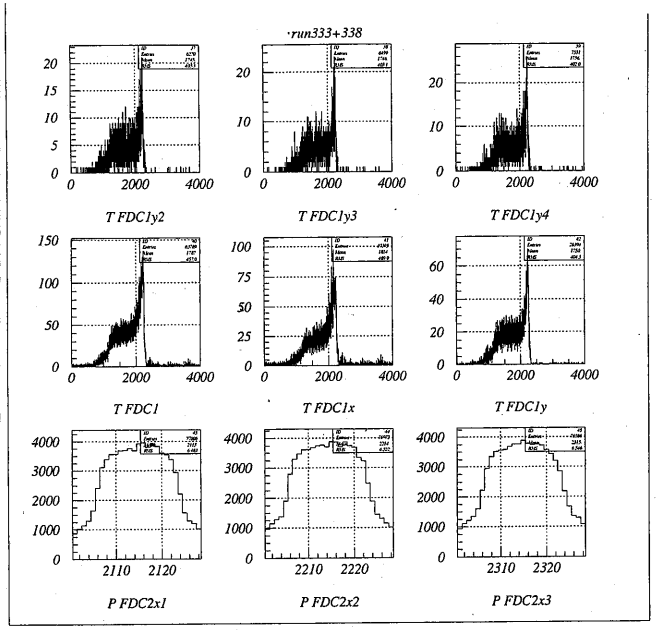
 Cosmic ray trigger 333 downstream 338 upstream

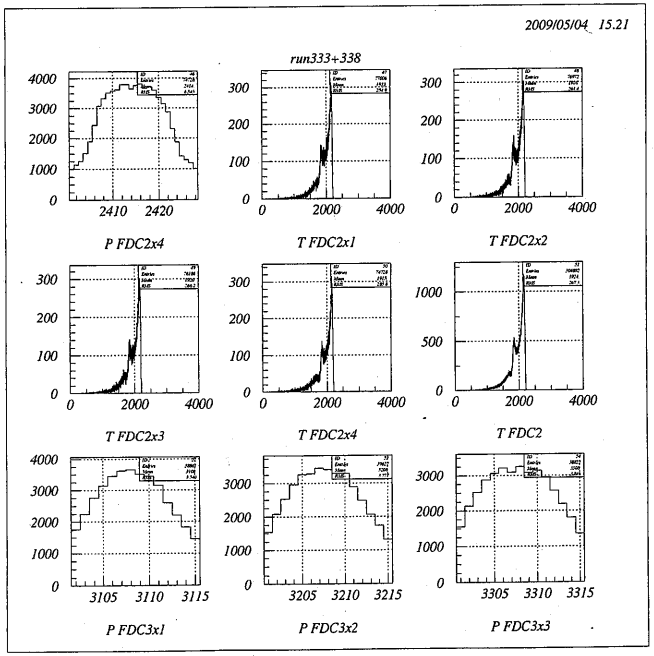


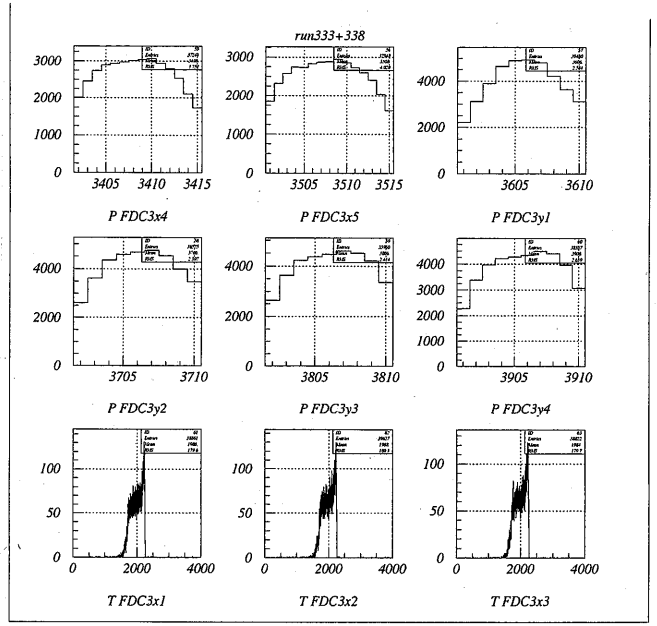


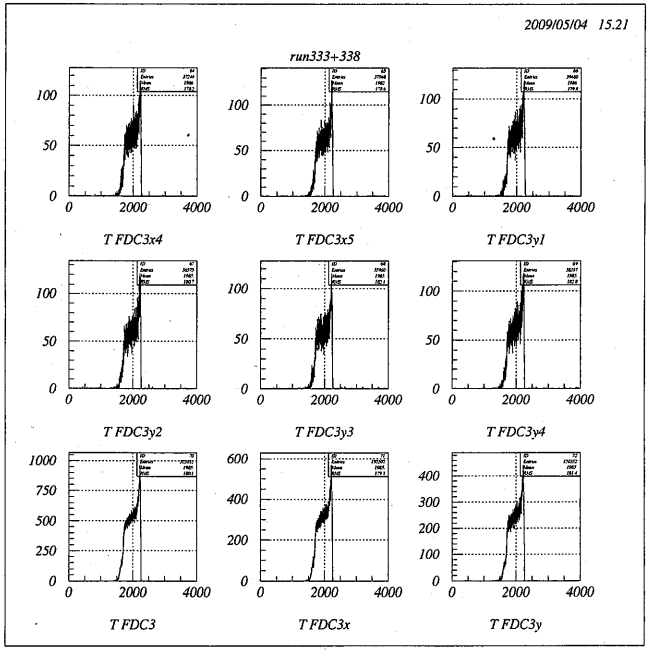





run333+338
T FDC1y2
T FDC1y3
T FDC1y4
T FDC1
T FDC1x
T FDC1y
P FDC2x1
P FDC2x2
P FDC2x3

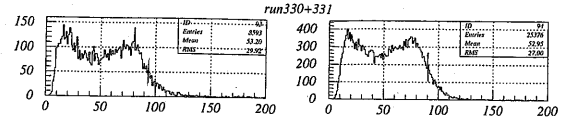

2009/05/04 15.21
run333+338
P FDC2x4
T FDC2x1
T FDC2x2
T FDC2x3
T FDC2x4
T FDC2
P FDC3x1
P FDC3x2
P FDC3x3


run333+338
P FDC3x4
P FDC3x5
P FDC3y1
P FDC3y2
P FDC3y3
P FDC3y4
T FDC3x1
T FDC3x2
T FDC3x3

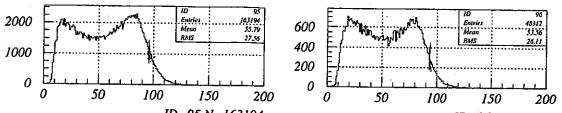

2009/05/04 15.21
run333+338
T FDC3x4
T FDC3x5
T FDC3y1
T FDC3y2
T FDC3y3
T FDC3y4
T FDC3
T FDC3x
T FDC3y

1730V − d

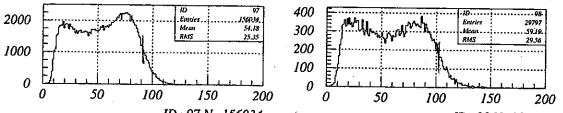
run330+331


ID=93,N=8593
BLOW h1A

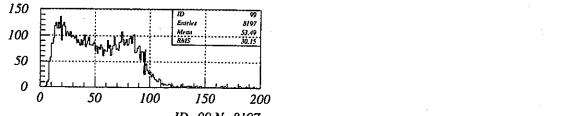
ID=94,N=25376
BLOW h2A


ID=95,N=163194
BLOW h3A

ID=96,N=48312
BLOW h4A

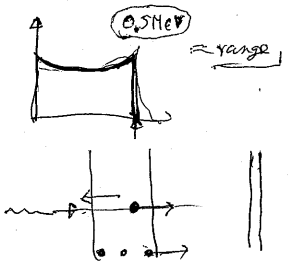

ID=97,N=156034
BLOW h5A

ID=98,N=29797
BLOW h6A

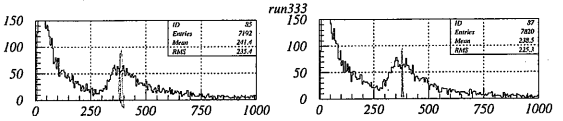

ID=99,N=8197
BLOW h7A

^{137}Cs ~0.5MeV

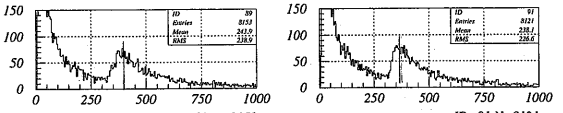
≈90~100ch



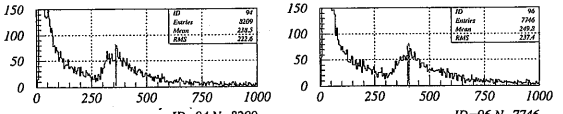
run333


ID=85,N=7192
CHBN BLOW h1A

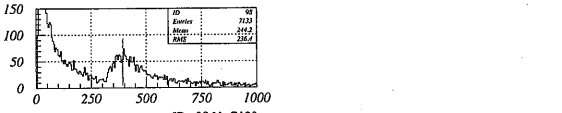
ID=87,N=7820
CHBN BLOW h2A


ID=89,N=8153
CHBN BLOW h3A

ID=91,N=8121
CHBN BLOW h4A


ID=94,N=8209
CHBN BLOW h5A

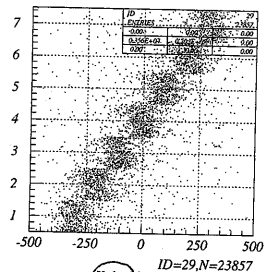
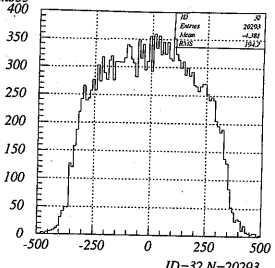
ID=96,N=7746
CHBN BLOW h6A


ID=98,N=7133
CHBN BLOW h7A

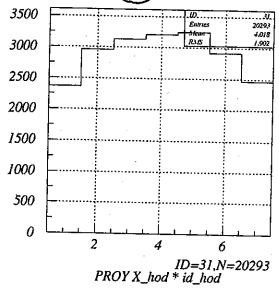
Cosmic ray ~2MeV

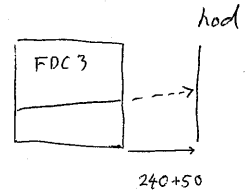
≈400ch

run333



ID=29,N=23857
X_hod * id_hod

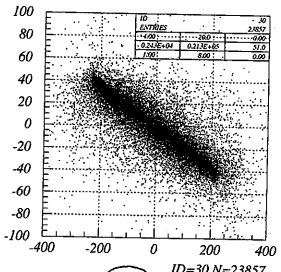
ID=32,N=20293
PROX X_hod * id_hod


ID=31,N=20293
PROY X_hod * id_hod

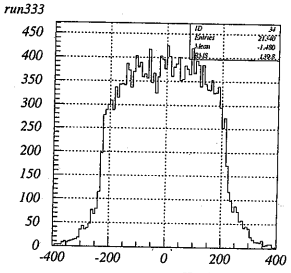


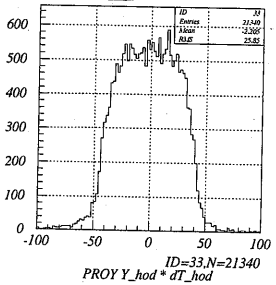
2009/05/04 17.

ΔT


ID=30,N=23857
Y_hod * dT_hod

run333


ID=34,N=21340
PROX Y_hod * dT_hod


ID=33,N=21340
PROY Y_hod * dT_hod

49 5/7(木)

① CH_2 target

100×100×10	#6	94.7g	947mg	
	#11	94.8g	948mg	
	#15	94.7g	947mg	
101×101 ×~1t	11	10.2		
	12	10.1		
	13	10.3		
	14	10.1	40.7	399mg
	15	10.2		
	16	10.1		
	17	~~9.9~~ 10.0		
	18	10.0	40.3	395.1mg

Veto用 PMT　　V01, V02, V03 とうべル　　Anode terminate 5Ω

	1.0	1.1	1.2	1.3	1.4	1.5	1.6	
V01	12	30	70	140	280	480	900	noise ~2mV
V02	19	44	100	200	400	800		2~3mV
V03	18	40	90	190	360	640	1100	~5mV

5/8(金)

~8:00 仙台 ⟶ ~12:30 理研

- はっぽうスチロール
  - 20mmt blue ×3
  - 30mmt white ×4
- BC606 新 1セット
- CH_2 本要旨 (左ページ)
- Veto用 PMT ×3

15:00より) CIと打合せ.

② HAC ⟶ FE へ online モニター

re-compile して走る所まで石確認. ⟶ すべて exp-Feb09/analys2 以下

5/8 ≈17:00

中に入る

He+CH_4 54気圧残
0.4気圧だったので 0.3気圧にもどし. しばらく様子を見る.
~7cc/min

He 残10気圧　　アルコール 5.6°C

kappa 1100A　　29°C ⟶ 34°Cで安定.

5/8 19:00頃

F12 beam まだ。

~200Hz @ F7~500Hz

F3~3×F7. ~1500Ω

SF12A L 900V

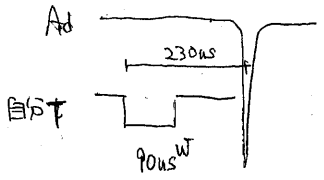
R 900V

		Ad. mV
L. Analog.	ℓ~3	20
	4	35
	5	50

→これでよし+15。

threshold 7mV

SF12AL



反対でtriggerしても threshold ~7mV でℓ=3は大丈夫。

11612" 900V OK? という話はあるが、これでよしとする。

SF12AR

ℓ=3	25mV
ℓ=4	45mV
ℓ=5	65mV (少しRより高い。)

SF12AR

→ 900→880V

ℓ=3	20mV
ℓ=4	35mV
ℓ=5	50mV

だいたいこれくらいでよい。

SF12BRL 1000V

ℓ=3	25mV
ℓ=4	40mV
ℓ=5	55mV
threshold	10mV ← OK.

R 1000V

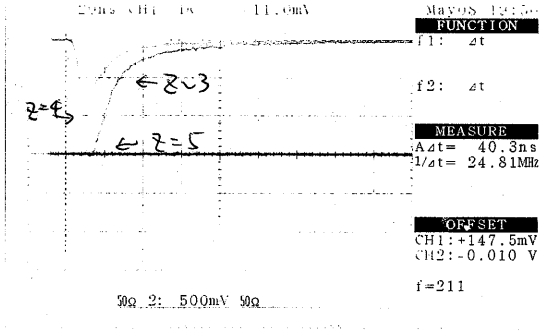
ℓ=3	25 〃
ℓ=4	40 〃
ℓ=5	60 mV

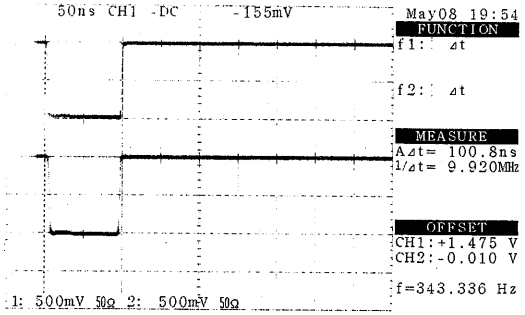
threshold.

で全部+100V

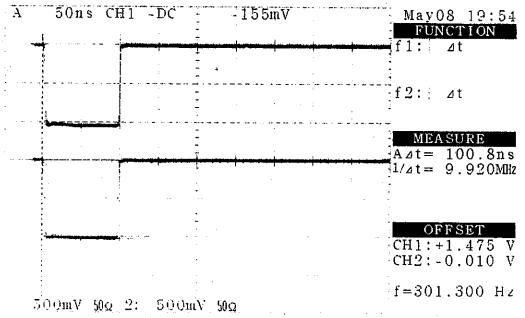
SF12AL	1000 V
AR	980 V
BL	1100
BR	1100

SF12BR モード

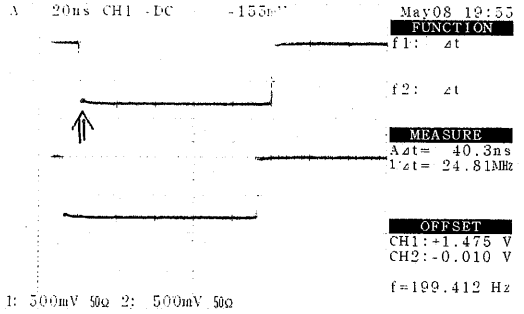




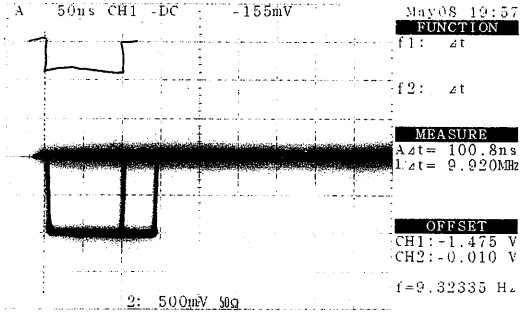
AL * AR



BL * BR

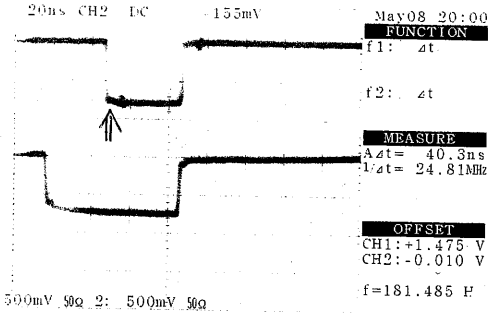


A * B



ΔEL

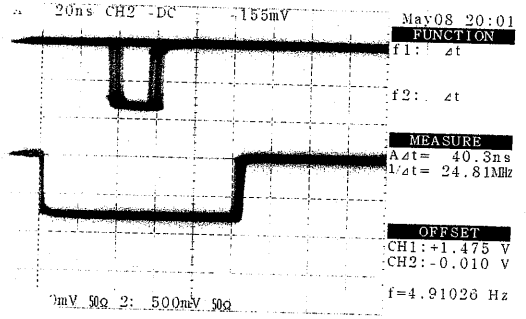
ΔER



A*B

W

→ beam



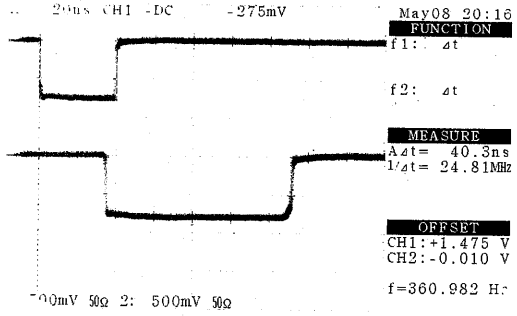
beam delayed

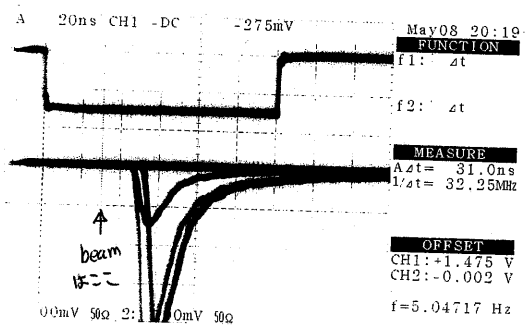
ΔEL + ΔER

F3

TDC	1	2	3	4	5	6	7	8
	~50n	60n 58	45n ⇓ 35n	45	55~60	60n	50~80	50~70

start を 10n 早める



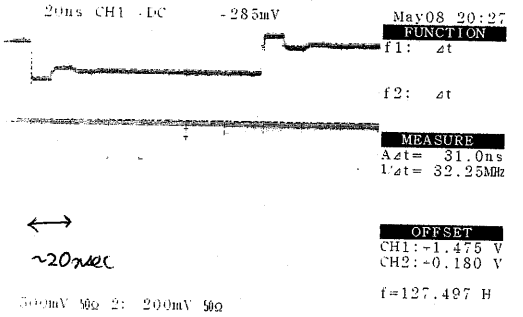


ADC gate

ΔEL

$$\frac{500\times10^{-3}\times 40\times10^{-9}}{100}$$

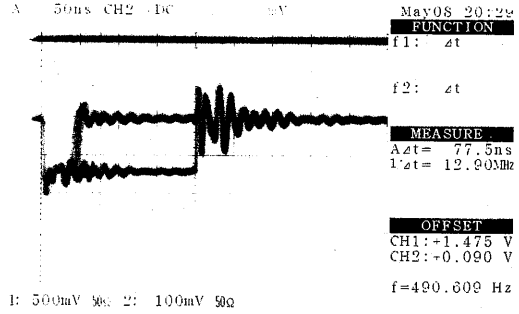
200pC



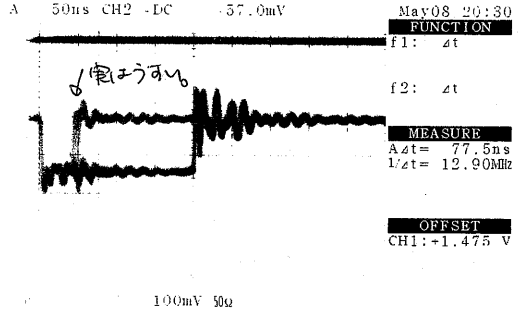
FERA gate

ADC analog

TFC out



#5



#4

FC 200ns で 40nsくらいにある ↦ 500chくらいにくるはず。

hodoscope #5中心

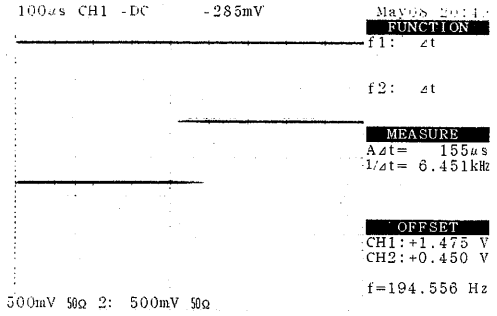
(注)

⇓

7 6 5 4 3 2 1 だと思った。

HV

A	1000, 980
B	1100, 1100
ΔE	1300, 1250



trig

busy 450~500μsec

Z=5の mainは 12B5とり

gate 11 1,1,1,3 260,320

C 496.19 497.7 #5

0.1%上進.

496.29 下

?

Z=4は 2平面.

DAQ の program の変更.

(注) TDC*6, ADC*6 ⟶ TDC*8, ADC*6

↓

T_S3, T_F7 をかえる.

Run401 ⟶ Jankに近い

BDC -2000 ⟶ 90~97% (80%)

FDC1 -2500/+1211 ⟶ ~75% (65%)

FDC2 -2298/1445 ⟶ 50% (40%)

FDC3 -2500/+1000 ⟶ ~50% (40%)

FDC2, FDC3 の eff が低く見える. ⟵ HVは高くはず.

VMEの問題か???

5/8

23:23~ RUN402 ~100Hz

BDC	FDC1	FDC2	FDC3
-2000	-2500/+1100 5.95mA	-2300/-1442	-2500/+900 3.34mA

4mm^t CH2 in

had #5が 高い.

23:35 63K events.

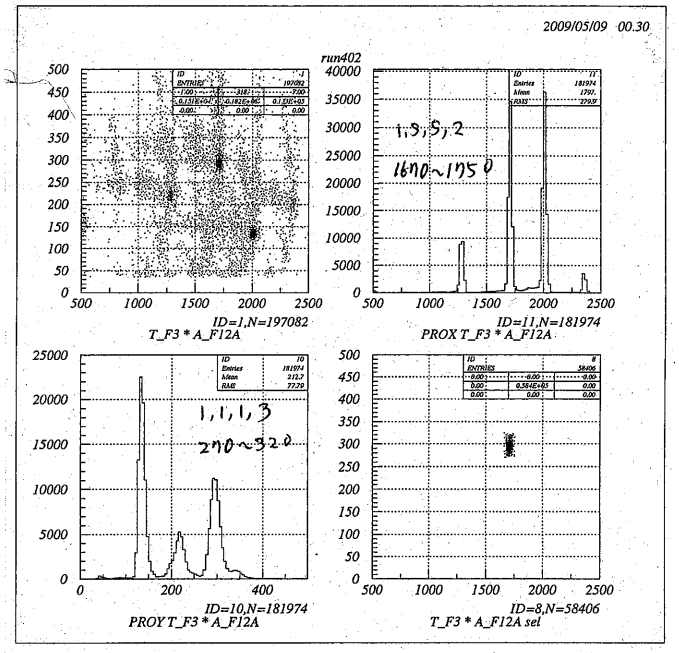
このrunでは. FDC2, FDC3 の efficiencyが >70%にもどった。
(ビームラインの他は 何も変えてない)

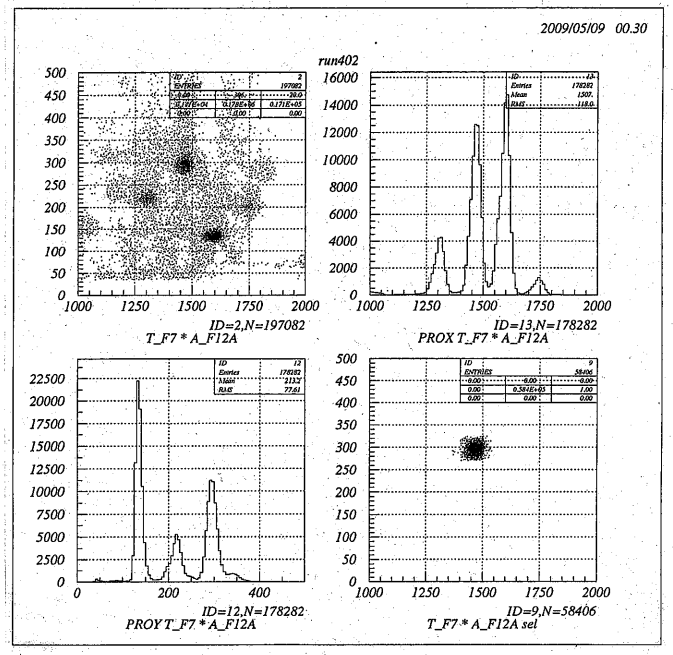
理由不明。

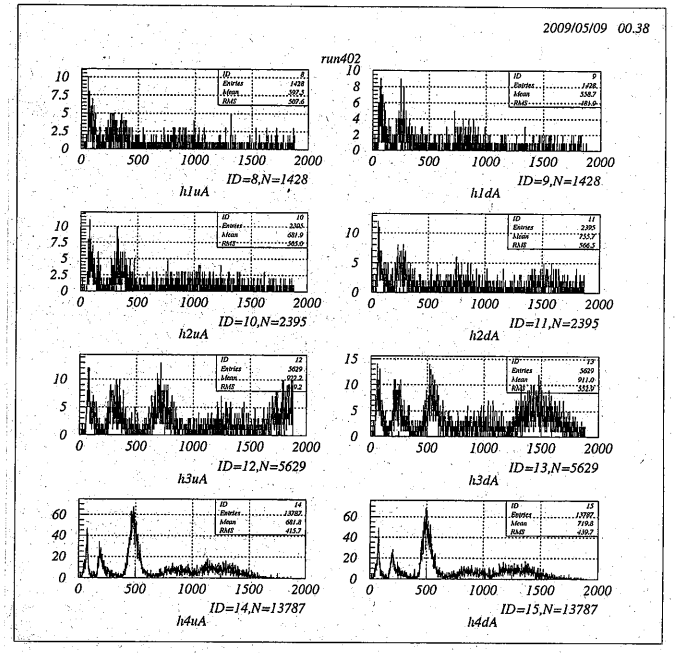
※ FDC1の 一面の efficiency が低い.

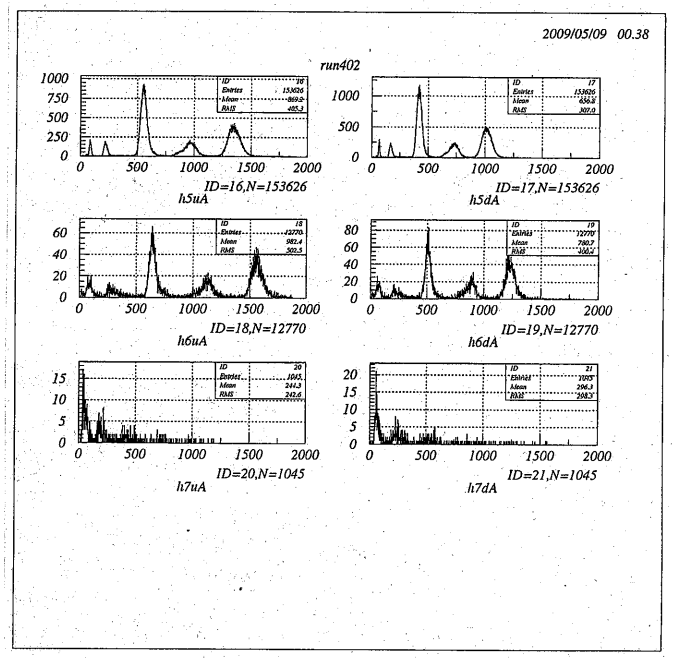
5/9 12:10 200K event とったので

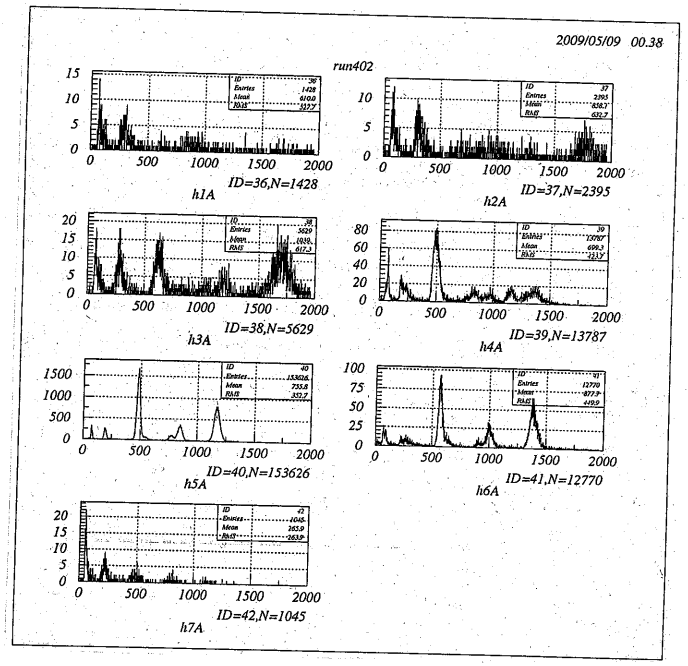
HV off (hadをのぞく)

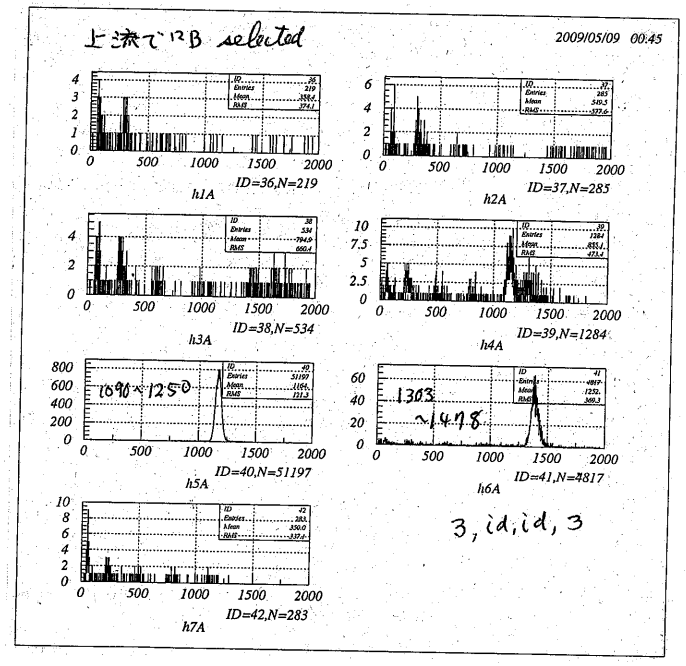

2009/05/09 00.30
run402
1,3,5,2
1690~1750
ID=1,N=197082
T_F3 * A_F12A
ID=11,N=181974
PROX T_F3 * A_F12A
1,1,1,3
290~320
ID=10,N=181974
PROY T_F3 * A_F12A
ID=8,N=58406
T_F3 * A_F12A sel


2009/05/09 00.30
run402
ID=2,N=197082
T_F7 * A_F12A
ID=13,N=178282
PROX T_F7 * A_F12A
ID=12,N=178282
PROY T_F7 * A_F12A
ID=9,N=58406
T_F7 * A_F12A sel

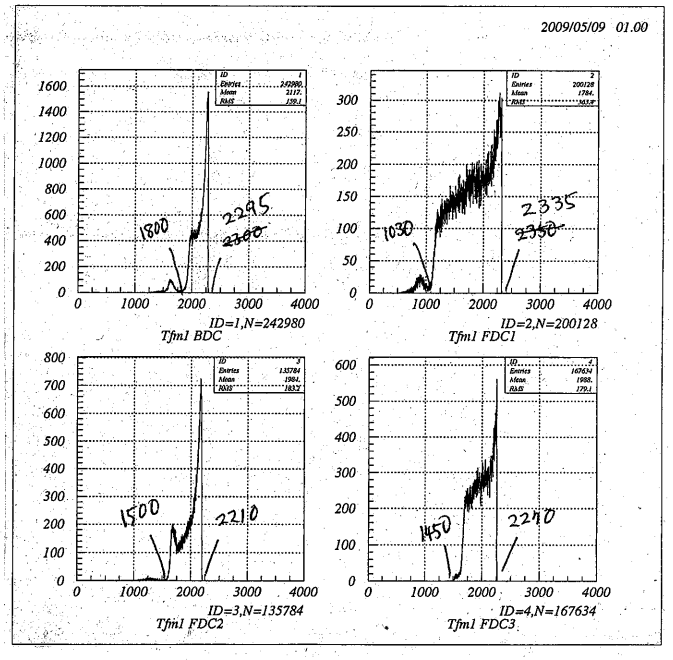

2009/05/09 00.38
run402
ID=8,N=1428
h1uA
ID=9,N=1428
h1dA
ID=10,N=2395
h2uA
ID=11,N=2395
h2dA
ID=12,N=5629
h3uA
ID=13,N=5629
h3dA
ID=14,N=13787
h4uA
ID=15,N=13787
h4dA

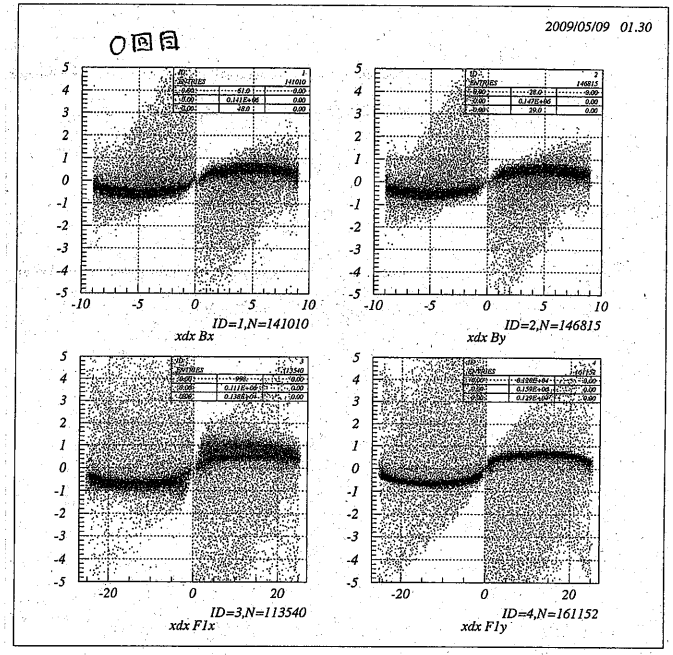

2009/05/09 00.38
run402
ID=16,N=153626
h5uA
ID=17,N=153626
h5dA
ID=18,N=12770
h6uA
ID=19,N=12770
h6dA
ID=20,N=1045
h7uA
ID=21,N=1045
h7dA

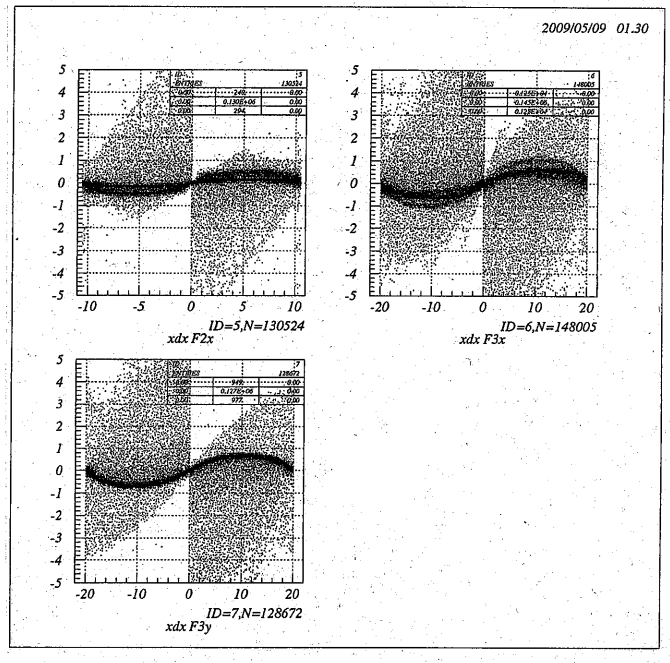


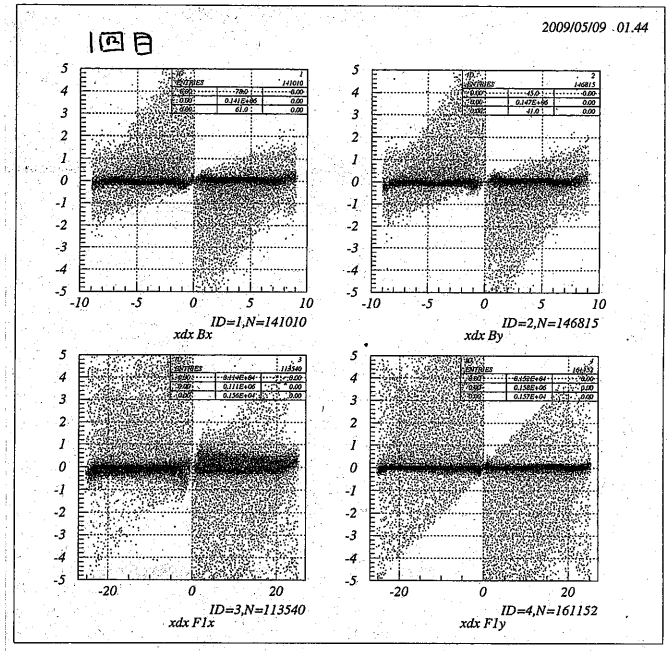


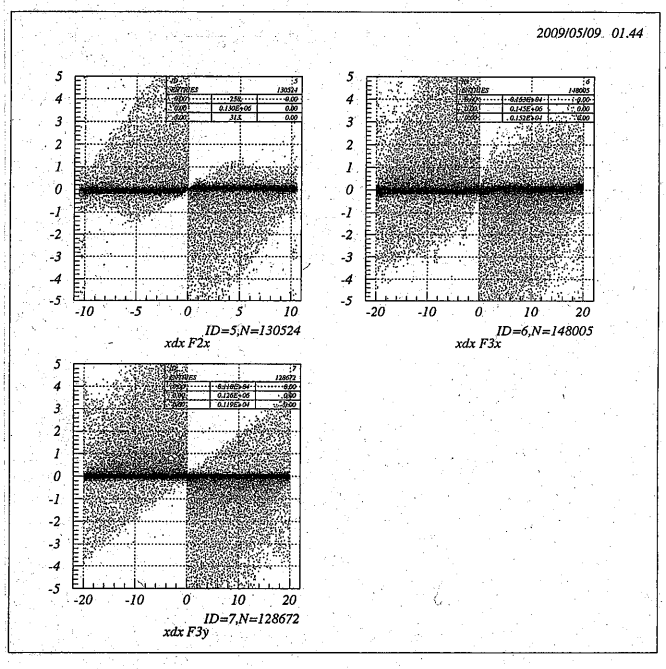

```
#Events :      197082
 Next Raw Data File ? [y/n: n] > Name    : Sum(M) M1      M2      M3      M4      M5+     MW1     MW2     MW3     MW4+    MC1
MC2     MC3     MC4+    :Tot/Ana : 197082 51895
BDCx1   :   98.84   89.79    8.40    0.62    0.03    0.00   94.44    4.30    0.10    0.00   92.95    5.60    0.27    0.01
BDCx2   :   99.50   86.27   11.82    1.31    0.09    0.01   93.10    6.24    0.15    0.01   91.08    7.80    0.59    0.03
BDCx3   :   99.62   85.64   12.27    1.55    0.16    0.01   92.21    7.15    0.25    0.01   91.09    7.83    0.66    0.05
BDCx4   :   99.56   85.93   12.12    1.37    0.13    0.01   92.59    6.75    0.22    0.01   91.03    7.91    0.58    0.03
BDCx5   :   99.70   84.92   12.94    1.64    0.19    0.00   91.55    7.84    0.31    0.01   91.02    7.97    0.66    0.05
BDCy1   :   99.63   85.70   12.22    1.56    0.14    0.02   92.35    6.97    0.30    0.01   91.18    7.80    0.62    0.03
BDCy2   :   99.71   85.17   12.61    1.73    0.20    0.01   91.76    7.63    0.31    0.01   91.00    7.96    0.71    0.05
BDCy3   :   99.64   85.39   12.48    1.61    0.15    0.01   91.97    7.39    0.27    0.00   91.18    7.77    0.65    0.04
BDCy4   :   99.57   85.64   12.32    1.47    0.13    0.01   92.50    6.84    0.22    0.01   90.88    8.04    0.62    0.03
BDCy5   :   98.97   88.67    9.44    0.80    0.05    0.01   93.80    5.04    0.12    0.00   92.41    6.22    0.32    0.01
FDC1x1  :   97.83   92.11    5.44    0.27    0.01    0.00   96.01    1.82    0.01    0.00   93.51    4.16    0.16    0.01
FDC1x2  :   96.65   91.25    5.15    0.24    0.01    0.00   95.50    1.14    0.01    0.00   91.92    4.54    0.19    0.00
FDC1x3  :   67.41   64.44    2.73    0.22    0.01    0.00   65.53    1.86    0.02    0.00   66.03    1.28    0.09    0.00
FDC1x4  :   99.61   91.59    7.53    0.46    0.03    0.00   97.20    2.40    0.01    0.00   93.66    5.71    0.23    0.01
FDC1y1  :   99.27   91.30    7.47    0.48    0.03    0.00   96.40    2.84    0.03    0.00   93.82    5.21    0.22    0.01
FDC1y2  :   99.83   90.25    8.78    0.73    0.07    0.01   95.22    4.53    0.08    0.00   93.78    5.74    0.29    0.02
FDC1y3  :   99.83   89.31    9.48    0.97    0.07    0.00   94.33    5.40    0.11    0.00   93.58    5.84    0.40    0.02
FDC1y4  :   97.40   91.90    5.26    0.23    0.01    0.00   95.39    1.99    0.01    0.00   93.69    3.58    0.12    0.00
FDC2x1  :   96.07   84.76   10.34    0.92    0.06    0.00   89.96    5.90    0.21    0.00   88.50    7.16    0.40    0.02
FDC2x2  :   96.47   83.46   11.77    1.14    0.08    0.01   89.21    6.94    0.30    0.01   87.88    8.07    0.50    0.02
FDC2x3  :   96.66   83.24   12.09    1.23    0.10    0.01   89.20    7.16    0.29    0.01   87.87    8.26    0.50    0.02
FDC2x4  :   96.58   82.49   12.58    1.36    0.13    0.01   88.75    7.47    0.35    0.01   87.51    8.49    0.55    0.03
FDC3x1  :  100.00   86.33   12.13    1.35    0.17    0.02   90.45    9.10    0.42    0.02   92.87    6.70    0.39    0.04
FDC3x2  :  100.00   84.53   13.37    1.87    0.21    0.03   88.71   10.56    0.70    0.03   91.66    7.73    0.58    0.03
FDC3x3  :  100.00   85.19   12.90    1.73    0.15    0.03   89.25   10.04    0.70    0.02   91.88    7.63    0.47    0.02
FDC3x4  :   99.99   84.71   13.23    1.81    0.21    0.02   88.72   10.60    0.64    0.03   91.82    7.60    0.54    0.04
FDC3x5  :  100.00   85.43   12.91    1.49    0.15    0.02   89.57    9.87    0.54    0.02   91.93    7.59    0.45    0.03
FDC3y1  :  100.00   84.61   13.28    1.86    0.23    0.03   88.58   10.71    0.69    0.03   92.10    7.33    0.52    0.05
FDC3y2  :  100.00   84.70   13.27    1.79    0.21    0.03   88.87   10.47    0.64    0.02   91.98    7.47    0.50    0.05
FDC3y3  :  100.00   85.05   12.91    1.82    0.20    0.02   89.19   10.20    0.59    0.02   92.06    7.40    0.52    0.02
FDC3y4  :   99.50   83.81   13.55    1.89    0.23    0.02   87.84   10.85    0.78    0.03   91.03    7.85    0.58    0.04
```

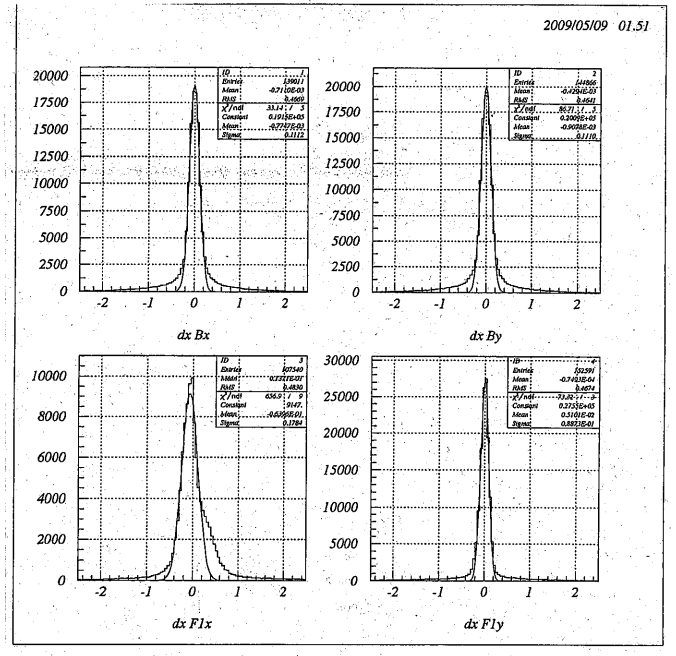


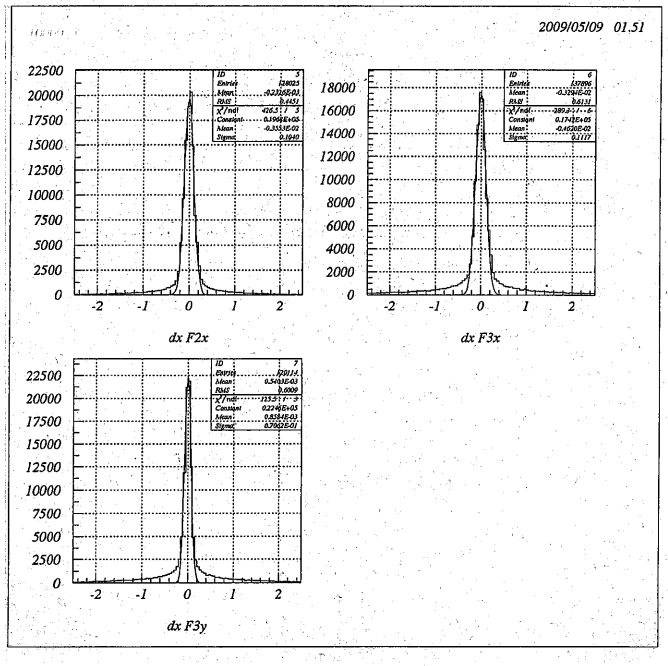

2009/05/09 01.30
ID=1,N=141010
xdx Bx
ID=2,N=146815
xdx By
ID=3,N=113540
xdx F1x
ID=4,N=161152
xdx F1y


2009/05/09 01.30
ID=5,N=130524
xdx F2x
ID=6,N=148005
xdx F3x
ID=7,N=128672
xdx F3y


2009/05/09 01.44
ID=1,N=141010
xdx Bx
ID=2,N=146815
xdx By
ID=3,N=113540
xdx F1x
ID=4,N=161152
xdx F1y


2009/05/09 01.44
ID=5,N=130524
xdx F2x
ID=6,N=148005
xdx F3x
ID=7,N=128672
xdx F3y

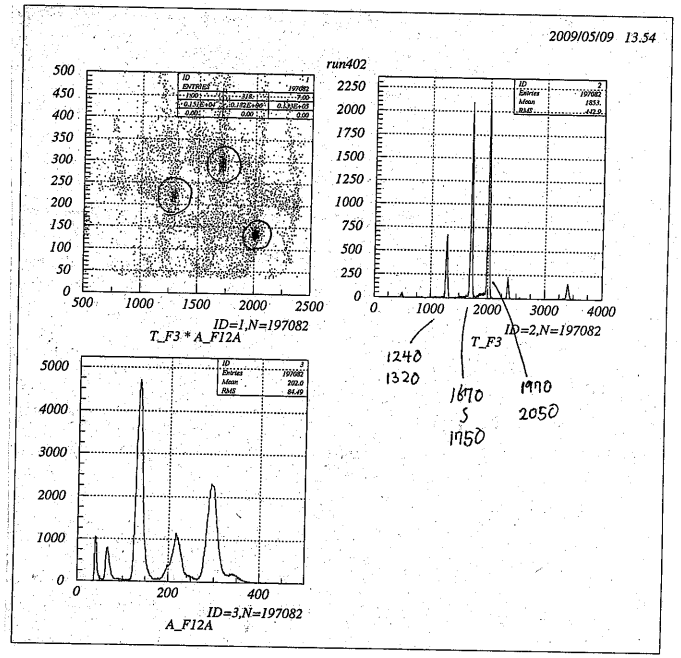


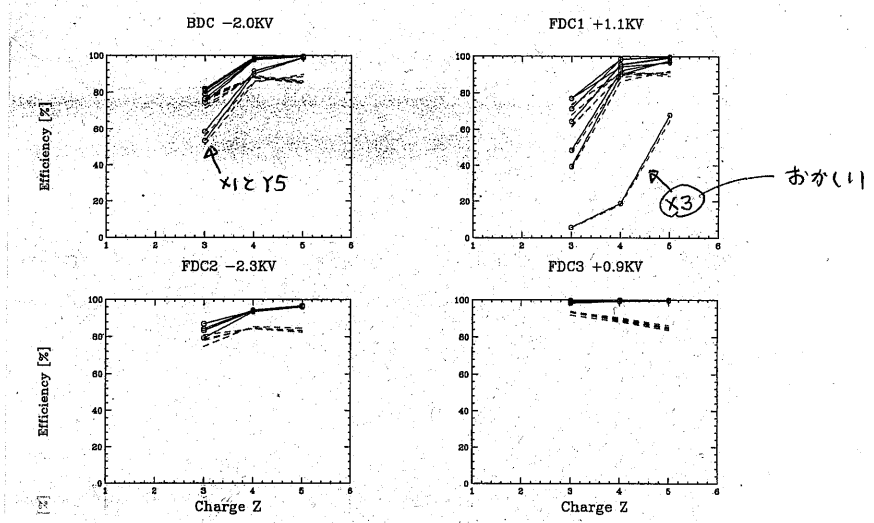


FDC1-X3の efficiency が低い ⟶ F1Xの残差分布がへんな理由？

β線の Plateau

BDC	−2.7kV	
FDC1	+1.7kV / −2.5kV	
FDC2	−3.1kV / −1.98kV	f=0.64
FDC3	+1.4kV / −2.5kV	





Z(beam) * Z(hod) でgateした時の efficiency

z=3

BDCx1	:	53.46	51.44	1.95	0.07	0.00	0.00	52.62	0.83	0.01	0.00	52.05	1.38	0.03	0.00
BDCx2	:	74.52	71.15	3.27	0.10	0.00	0.00	72.84	1.66	0.02	0.00	72.41	2.08	0.03	0.00
BDCx3	:	79.00	75.19	3.63	0.17	0.01	0.00	76.82	2.15	0.03	0.00	76.79	2.14	0.06	0.00
BDCx4	:	79.33	75.66	3.50	0.16	0.00	0.00	77.32	1.97	0.04	0.00	77.15	2.14	0.04	0.00
BDCx5	:	81.95	77.64	4.07	0.22	0.02	0.00	79.56	2.32	0.06	0.00	79.40	2.50	0.05	0.00
BDCy1	:	78.88	75.09	3.56	0.23	0.01	0.00	76.87	1.96	0.04	0.00	76.57	2.24	0.07	0.00
BDCy2	:	80.67	76.48	3.95	0.23	0.01	0.00	78.50	2.13	0.04	0.00	78.09	2.52	0.07	0.00
BDCy3	:	81.50	77.46	3.82	0.21	0.01	0.00	79.21	2.25	0.04	0.00	79.17	2.26	0.07	0.00
BDCy4	:	76.34	72.75	3.41	0.17	0.01	0.00	74.52	1.77	0.05	0.00	74.07	2.23	0.04	0.00
BDCy5	:	58.58	56.18	2.33	0.07	0.00	0.00	57.56	1.01	0.01	0.00	56.92	1.64	0.02	0.00
FDC1x1	:	39.36	38.14	1.19	0.03	0.00	0.00	39.11	0.25	0.00	0.00	38.34	1.00	0.02	0.00
FDC1x2	:	76.93	73.75	3.06	0.12	0.00	0.00	76.57	0.36	0.00	0.00	74.00	2.84	0.10	0.00
FDC1x3	:	5.65	5.43	0.22	0.01	0.00	0.00	5.62	0.03	0.00	0.00	5.45	0.19	0.01	0.00
FDC1x4	:	64.30	61.48	2.65	0.16	0.00	0.00	63.66	0.64	0.01	0.00	62.03	2.15	0.11	0.00
FDC1y1	:	64.36	61.96	2.34	0.06	0.00	0.00	63.77	0.59	0.00	0.00	62.45	1.87	0.04	0.00
FDC1y2	:	71.36	67.94	3.26	0.15	0.01	0.00	70.20	1.15	0.01	0.00	68.85	2.44	0.06	0.00
FDC1y3	:	77.14	73.23	3.71	0.20	0.01	0.00	75.71	1.43	0.01	0.00	74.35	2.71	0.08	0.00
FDC1y4	:	48.38	47.02	1.34	0.02	0.00	0.00	48.04	0.34	0.00	0.00	47.32	1.06	0.01	0.00
FDC2x1	:	79.16	74.65	4.29	0.21	0.01	0.00	77.25	1.88	0.03	0.00	75.87	3.18	0.11	0.00
FDC2x2	:	83.26	77.86	5.15	0.24	0.01	0.00	80.96	2.25	0.06	0.00	79.31	3.85	0.10	0.01
FDC2x3	:	84.25	78.59	5.37	0.28	0.01	0.00	81.84	2.36	0.05	0.00	80.05	4.06	0.14	0.00
FDC2x4	:	86.95	80.83	5.78	0.32	0.02	0.00	84.36	2.53	0.05	0.00	82.48	4.33	0.13	0.00
FDC3x1	:	98.90	93.64	4.84	0.39	0.03	0.01	95.62	3.19	0.09	0.01	95.92	2.84	0.14	0.01
FDC3x2	:	99.56	93.50	5.54	0.50	0.03	0.00	95.61	3.80	0.14	0.00	96.06	3.33	0.17	0.01
FDC3x3	:	99.49	93.77	5.28	0.40	0.04	0.00	95.75	3.61	0.12	0.01	96.18	3.15	0.15	0.01
FDC3x4	:	99.33	93.24	5.58	0.46	0.03	0.01	95.41	3.79	0.13	0.01	95.68	3.45	0.19	0.01
FDC3x5	:	98.84	93.28	5.14	0.39	0.02	0.00	95.29	3.44	0.10	0.00	95.56	3.13	0.14	0.01
FDC3y1	:	99.81	93.45	5.87	0.46	0.03	0.00	95.66	4.01	0.13	0.01	96.27	3.41	0.13	0.00
FDC3y2	:	99.63	93.88	5.25	0.47	0.03	0.00	95.90	3.63	0.11	0.00	96.30	3.15	0.18	0.00
FDC3y3	:	99.59	93.68	5.42	0.46	0.04	0.00	95.75	3.71	0.12	0.01	96.24	3.19	0.16	0.00
FDC3y4	:	98.21	91.82	5.76	0.57	0.05	0.00	93.99	4.07	0.15	0.00	94.44	3.53	0.23	0.01
BDCx4	:	79.33	75.66	3.50	0.16	0.00	0.00	77.32	1.97	0.04					

z=4

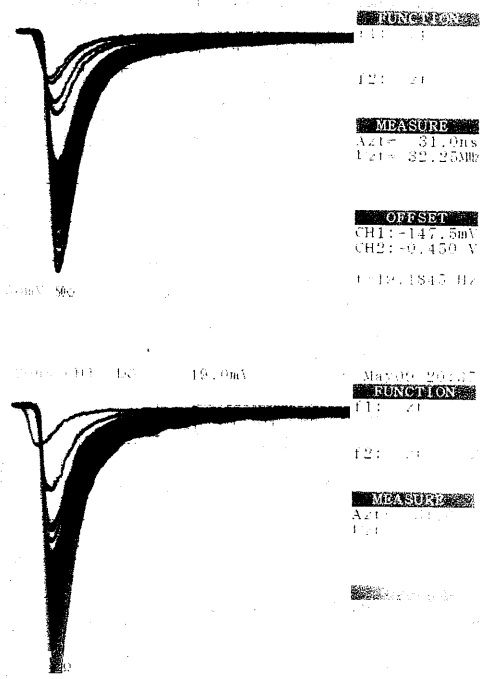
BDCx1	:	90.11	85.40	4.52	0.18	0.01	0.00	87.28	2.79	0.04	0.00	87.50	2.56	0.05	0.00
BDCx2	:	97.65	89.10	7.97	0.53	0.05	0.01	93.33	4.24	0.08	0.01	92.43	5.02	0.19	0.02
BDCx3	:	98.35	88.41	9.04	0.84	0.06	0.00	93.28	4.93	0.13	0.01	92.01	5.99	0.35	0.01
BDCx4	:	98.28	88.60	8.87	0.74	0.06	0.00	93.39	4.76	0.14	0.00	92.03	5.96	0.28	0.01
BDCx5	:	99.06	87.78	10.31	0.88	0.08	0.01	93.46	5.46	0.14	0.01	91.96	6.73	0.37	0.01
BDCy1	:	98.37	88.28	9.17	0.82	0.10	0.00	93.16	5.05	0.16	0.01	92.13	5.93	0.31	0.01
BDCy2	:	98.81	88.19	9.69	0.85	0.08	0.00	93.66	4.98	0.16	0.01	91.90	6.54	0.35	0.02
BDCy3	:	98.75	88.15	9.62	0.91	0.06	0.00	93.42	5.15	0.17	0.01	92.06	6.28	0.39	0.01
BDCy4	:	98.07	88.73	8.48	0.79	0.05	0.01	93.28	4.66	0.11	0.02	92.32	5.43	0.31	0.01
BDCy5	:	91.55	86.08	5.23	0.23	0.01	0.00	88.33	3.19	0.03	0.00	88.42	3.05	0.08	0.00
FDC1x1	:	90.10	86.48	3.50	0.11	0.01	0.00	88.96	1.13	0.01	0.00	87.35	2.67	0.07	0.00
FDC1x2	:	94.33	90.46	3.72	0.14	0.01	0.00	93.66	0.66	0.01	0.00	90.83	3.37	0.11	0.01
FDC1x3	:	18.84	17.99	0.81	0.05	0.00	0.00	18.60	0.24	0.01	0.00	18.20	0.63	0.02	0.00
FDC1x4	:	95.60	89.86	5.47	0.26	0.01	0.00	93.75	1.85	0.01	0.00	91.42	4.05	0.13	0.01
FDC1y1	:	95.33	89.85	5.20	0.26	0.01	0.00	93.20	2.12	0.01	0.00	91.72	3.45	0.15	0.01
FDC1y2	:	98.42	91.72	6.28	0.41	0.01	0.00	95.38	3.02	0.03	0.00	94.11	4.11	0.21	0.00
FDC1y3	:	98.45	91.16	6.74	0.50	0.03	0.01	94.98	3.39	0.08	0.00	93.84	4.40	0.21	0.00
FDC1y4	:	92.12	88.44	3.57	0.11	0.00	0.00	90.86	1.26	0.01	0.00	89.58	2.49	0.05	0.00
FDC2x1	:	93.50	85.41	7.70	0.39	0.01	0.00	89.38	4.07	0.06	0.00	88.07	5.27	0.16	0.00
FDC2x2	:	93.83	84.65	8.53	0.62	0.02	0.01	89.05	4.59	0.19	0.01	87.47	6.10	0.25	0.00
FDC2x3	:	94.35	84.51	9.08	0.72	0.04	0.01	89.42	4.76	0.17	0.01	87.39	6.65	0.30	0.02
FDC2x4	:	93.82	84.23	8.87	0.68	0.04	0.00	89.11	4.54	0.16	0.01	87.24	6.24	0.33	0.01
FDC3x1	:	99.97	90.46	8.47	0.95	0.08	0.01	93.49	6.22	0.25	0.01	94.94	4.74	0.27	0.02
FDC3x2	:	99.99	88.69	10.00	1.21	0.07	0.02	92.22	7.37	0.39	0.01	93.80	5.88	0.29	0.02
FDC3x3	:	99.98	89.56	9.30	1.04	0.08	0.01	92.58	7.08	0.31	0.01	94.23	5.37	0.38	0.01
FDC3x4	:	99.93	88.85	9.76	1.19	0.12	0.01	92.18	7.38	0.37	0.01	93.76	5.72	0.43	0.03
FDC3x5	:	99.96	90.09	8.89	0.92	0.05	0.01	93.09	6.55	0.31	0.01	94.56	5.14	0.25	0.01
FDC3y1	:	99.98	89.00	9.73	1.09	0.14	0.02	92.31	7.26	0.36	0.04	94.14	5.50	0.32	0.02
FDC3y2	:	99.94	89.14	9.72	0.92	0.15	0.01	92.55	7.06	0.32	0.01	93.93	5.70	0.28	0.03
FDC3y3	:	99.96	89.15	9.55	1.10	0.15	0.01	92.57	7.04	0.34	0.02	94.05	5.56	0.33	0.03
FDC3y4	:	99.24	88.19	9.88	1.02	0.15	0.01	91.43	7.45	0.35	0.01	93.12	5.83	0.28	0.02

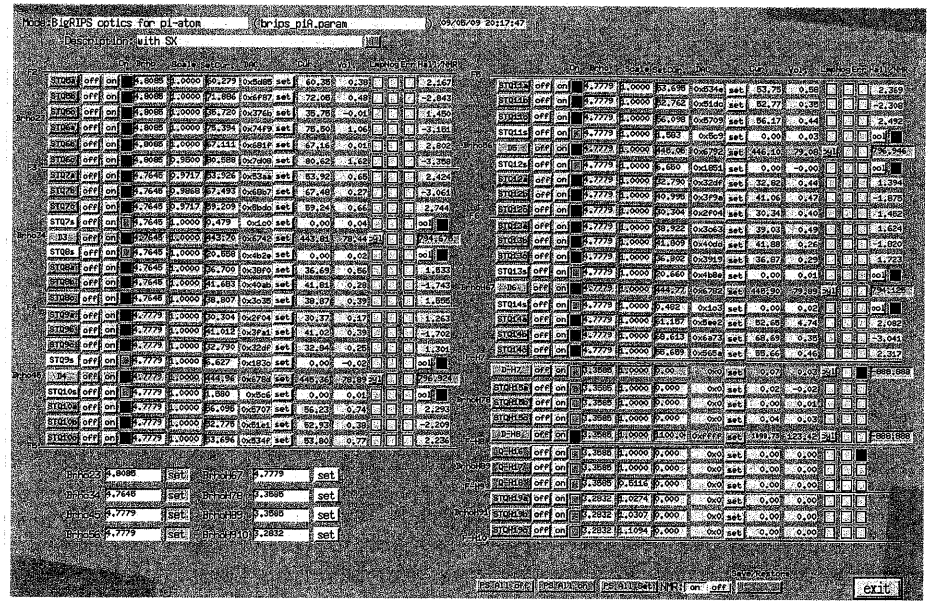
z=5

BDCx1	:	98.81	89.79	8.36	0.63	0.03	0.00	94.42	4.28	0.11	0.00	92.94	5.58	0.27	0.01
BDCx2	:	99.46	86.31	11.76	1.29	0.09	0.01	93.07	6.22	0.16	0.01	91.11	7.75	0.57	0.02
BDCx3	:	99.62	85.68	12.24	1.54	0.16	0.01	92.19	7.17	0.25	0.01	91.12	7.80	0.65	0.04
BDCx4	:	99.54	85.87	12.17	1.37	0.12	0.01	92.55	6.76	0.22	0.01	90.98	7.94	0.59	0.03
BDCx5	:	99.70	84.94	12.92	1.65	0.19	0.00	91.57	7.80	0.32	0.01	90.99	7.98	0.67	0.05
BDCy1	:	99.62	85.67	12.23	1.56	0.14	0.02	92.36	6.95	0.30	0.01	91.14	7.83	0.62	0.03
BDCy2	:	99.70	85.13	12.65	1.71	0.20	0.01	91.75	7.64	0.30	0.01	90.97	7.97	0.71	0.05
BDCy3	:	99.64	85.37	12.50	1.61	0.15	0.01	91.97	7.40	0.27	0.00	91.15	7.80	0.65	0.04
BDCy4	:	99.57	85.62	12.34	1.48	0.13	0.01	92.48	6.86	0.22	0.01	90.88	8.04	0.62	0.03
BDCy5	:	98.97	88.66	9.45	0.80	0.06	0.01	93.79	5.05	0.13	0.00	92.40	6.23	0.32	0.01
FDC1x1	:	97.87	92.16	5.43	0.27	0.01	0.00	96.04	1.82	0.01	0.00	93.55	4.15	0.16	0.01
FDC1x2	:	96.68	91.26	5.16	0.24	0.01	0.00	95.49	1.18	0.01	0.00	91.97	4.52	0.19	0.01
FDC1x3	:	68.00	64.94	2.83	0.22	0.01	0.00	66.12	1.86	0.02	0.00	66.53	1.38	0.10	0.00
FDC1x4	:	99.61	91.59	7.52	0.47	0.03	0.00	97.17	2.42	0.01	0.00	93.66	5.70	0.24	0.01
FDC1y1	:	99.25	91.30	7.46	0.47	0.03	0.00	96.40	2.83	0.03	0.00	93.81	5.22	0.22	0.01
FDC1y2	:	99.81	90.14	8.85	0.75	0.07	0.01	95.15	4.58	0.08	0.00	93.72	5.79	0.30	0.02
FDC1y3	:	99.82	89.28	9.50	0.97	0.06	0.00	94.33	5.39	0.11	0.00	93.55	5.86	0.40	0.01
FDC1y4	:	97.41	91.87	5.30	0.23	0.01	0.00	95.40	2.00	0.01	0.00	93.66	3.63	0.12	0.00
FDC2x1	:	96.10	84.68	10.42	0.93	0.06	0.00	89.91	5.97	0.21	0.00	88.47	7.22	0.39	0.02
FDC2x2	:	96.49	83.43	11.81	1.15	0.09	0.01	89.16	7.00	0.31	0.01	87.88	8.08	0.50	0.02
FDC2x3	:	96.68	83.22	12.10	1.25	0.10	0.01	89.21	7.18	0.28	0.01	87.86	8.29	0.52	0.02
FDC2x4	:	96.59	82.42	12.64	1.38	0.13	0.01	88.64	7.58	0.36	0.01	87.50	8.52	0.55	0.02
FDC3x1	:	99.99	86.25	12.20	1.35	0.17	0.02	90.37	9.17	0.43	0.02	92.85	6.71	0.40	0.03
FDC3x2	:	99.99	84.47	13.41	1.87	0.21	0.03	88.65	10.61	0.70	0.03	91.62	7.77	0.57	0.03
FDC3x3	:	99.99	85.15	12.93	1.72	0.16	0.03	89.19	10.09	0.70	0.02	91.87	7.63	0.47	0.02
FDC3x4	:	99.97	84.60	13.30	1.83	0.21	0.02	88.66	10.63	0.64	0.03	91.73	7.67	0.54	0.04
FDC3x5	:	99.98	85.39	12.93	1.49	0.15	0.02	89.52	9.91	0.53	0.02	91.90	7.59	0.46	0.03
FDC3y1	:	100.00	84.57	13.31	1.85	0.23	0.03	88.52	10.76	0.68	0.03	92.11	7.33	0.51	0.05
FDC3y2	:	99.97	84.65	13.27	1.81	0.22	0.03	88.81	10.49	0.66	0.01	91.97	7.46	0.49	0.04
FDC3y3	:	99.97	84.96	12.95	1.84	0.20	0.02	89.12	10.23	0.60	0.02	91.97	7.44	0.53	0.02
FDC3y4	:	99.49	83.72	13.60	1.92	0.23	0.02	87.79	10.88	0.79	0.03	90.95	7.92	0.58	0.04

20:23

Z=7 beam





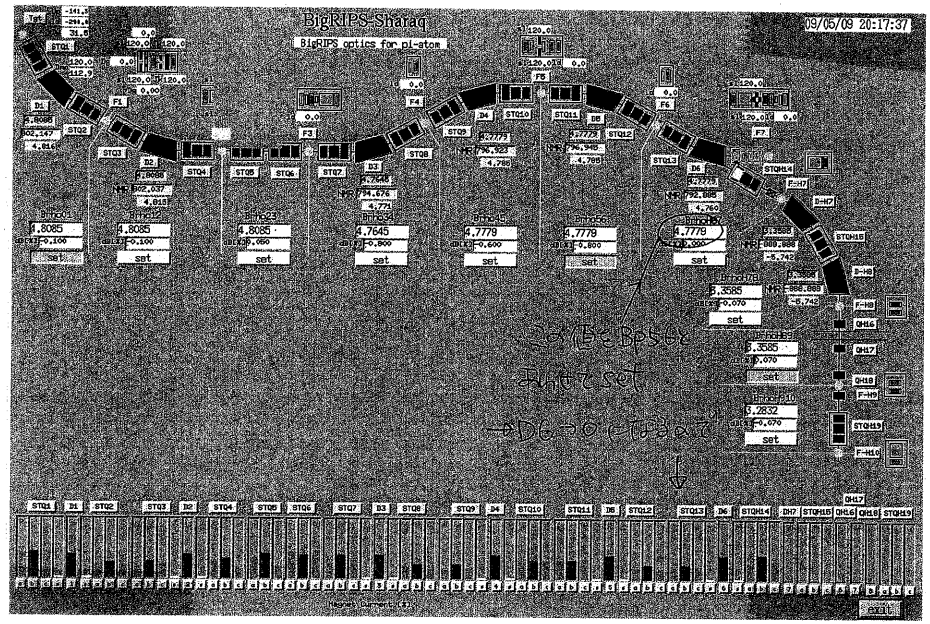
他 条件を R402と同じにして ビームトリガーのデータ

run 403 5/9 20:38~

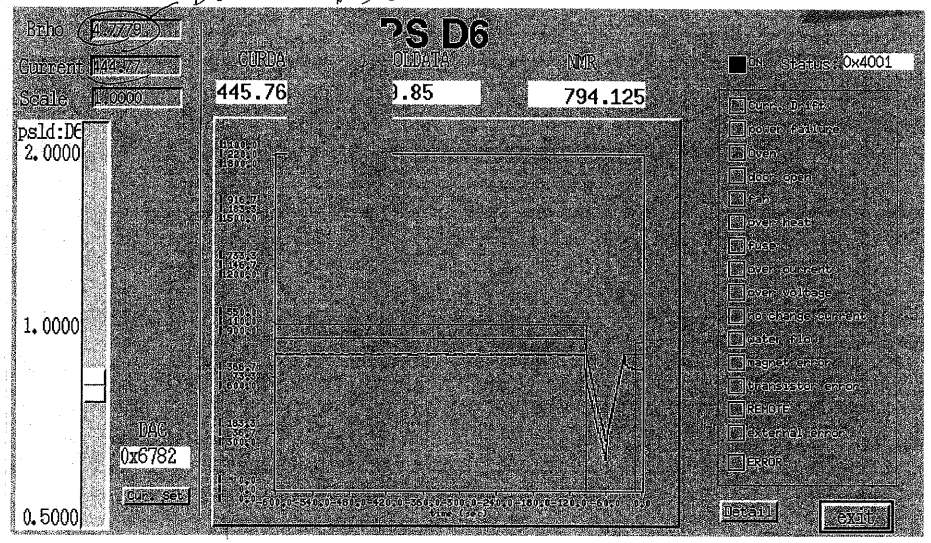
hodoscopeは overflow ~80Hz

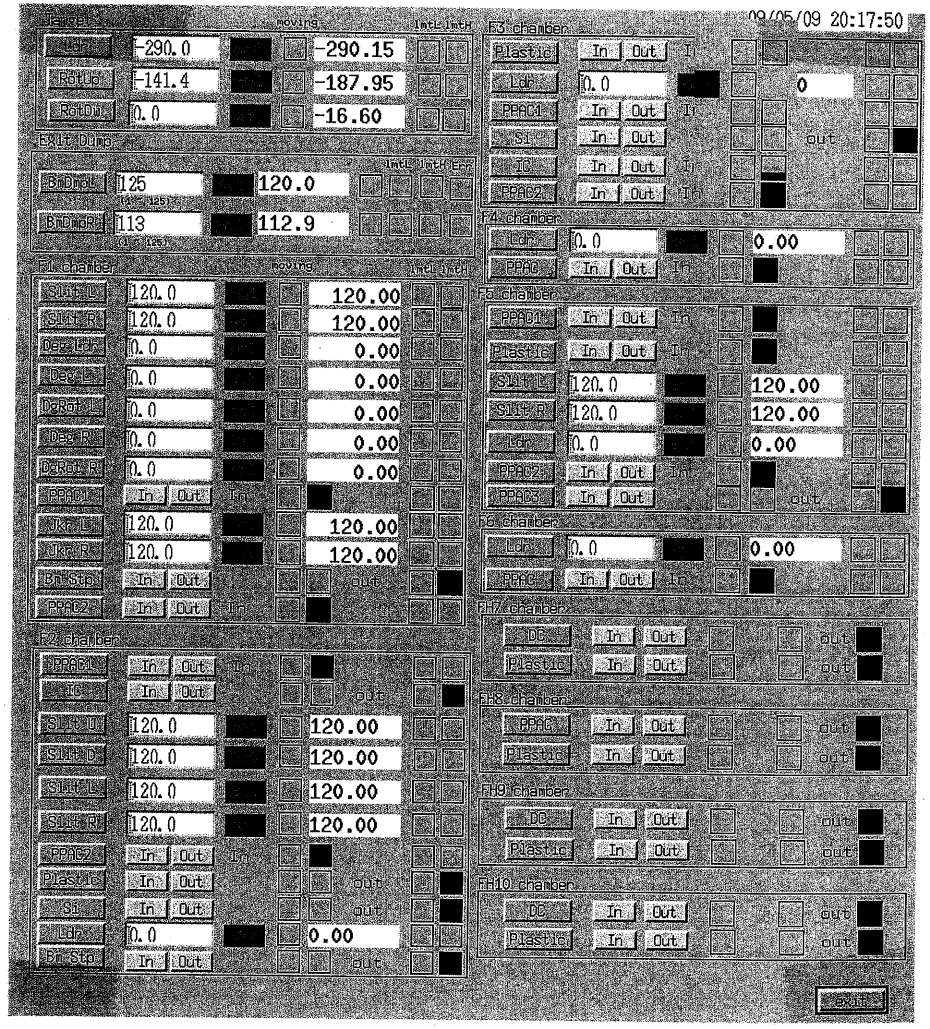
F12A	L / R	1000, 980
B		1100, 1100
E4/R		1300, 1250

BDC	-2000 v
FDC1	-2500 / ~~-2300~~ +1160 v
2	-2300 / -1445 v
3	-2500 / +900 v



D6はここに数字を入れて cur.set する。





RUN403後

D6 のみで beam こだくに FERA pedestal とり直し

Cont-fera03_090509.ped に旧dataと保存.

./cont-fera03で pedestal とる.

May 9 2009 21:03 **cont_fera03.ped** Page 1

```
2
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 19 2   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 3   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 4   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
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 19 6   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
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 19 9   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 10  0.468797386   0.174932331   3. 1   0.524796963   0.531202614
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 19 13  0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 14  0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 15  0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 21 0   35.7328796   0.396600157   3. 37   1.1898005   1.26712036
 21 1   35.2544022   0.32713899   3. 37   0.981416941   1.74559784
 21 2   33.4200172   0.304529905   3. 35   0.913589716   1.57998276
 21 3   29.0640221   0.391144693   3. 31   1.17343402   1.93597794
 21 4   40.1871262   0.340558439   3. 42   1.02167535   1.81287384
 21 5   42.928093   0.344035953   3. 44   1.03210783   1.07190704
 21 6   33.100853   0.3403368   3. 35   1.0210104   1.89914703
 21 7   34.5077972   0.225456759   3. 36   0.676370263   1.49220276
 21 8   37.101841   0.326310188   3. 39   0.978930593   1.89815903
 21 9   37.6680145   0.364778578   3. 39   1.09433579   1.33198547
 21 10   31.7222424   0.327458739   3. 33   0.982376218   1.27775764
 21 11   31.1631565   0.33465144   3. 33   1.00395429   1.83684349
 21 12   40.1192513   0.35198465   3. 42   1.05595398   1.88074875
 21 13   29.121788   0.338413596   3. 31   1.01524079   1.87821198
 21 14   35.0376053   0.344226718   3. 37   1.03268015   1.96239471
 21 15   36.4154091   0.289830267   3. 38   0.869490802   1.58459091
```

May 9 2009 21:06 **cont_fera03_090509.ped** Page 1

```
2
 19 0   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 1   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 2   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 3   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 4   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 5   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 6   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 7   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 8   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 9   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 10   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 11   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 12   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 13   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 14   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 19 15   0.468797386   0.174932331   3. 1   0.524796963   0.531202614
 21 0   38.0685081   0.853885372   3. 41   2.50165606   2.93149185
 21 1   37.152401   0.705705106   3. 40   2.11711526   2.84759903
 21 2   35.5893135   0.647396505   3. 38   1.94218946   2.41068649
 21 3   31.0855312   0.698545218   3. 34   2.09563565   2.91446877
 21 4   43.4030571   0.697943389   3. 46   2.09383011   2.5969429
 21 5   39.4502983   0.704259634   3. 42   2.1127789   2.54970169
 21 6   25.5619659   0.516207337   3. 28   1.54862201   2.43803406
 21 7   34.3875351   0.174572527   3. 35   0.523717582   0.612464905
 21 8   39.6796112   0.65052706   3. 42   1.95158124   2.32038879
 21 9   47.2990608   0.779679   3. 50   2.33903694   2.70093918
 21 10   33.3606377   0.626268446   3. 36   1.8788054   2.63936234
 21 11   34.2233887   0.669186354   3. 37   2.00755906   2.77661133
 21 12   40.790947   0.586078703   3. 43   1.75823617   2.20905304
 21 13   34.1945343   0.768517613   3. 37   2.30555296   2.8054657
 21 14   29.9524059   0.919407308   3. 33   2.75822186   3.04759407
 21 15   36.4759712   0.255838454   3. 38   0.767515361   1.52402878
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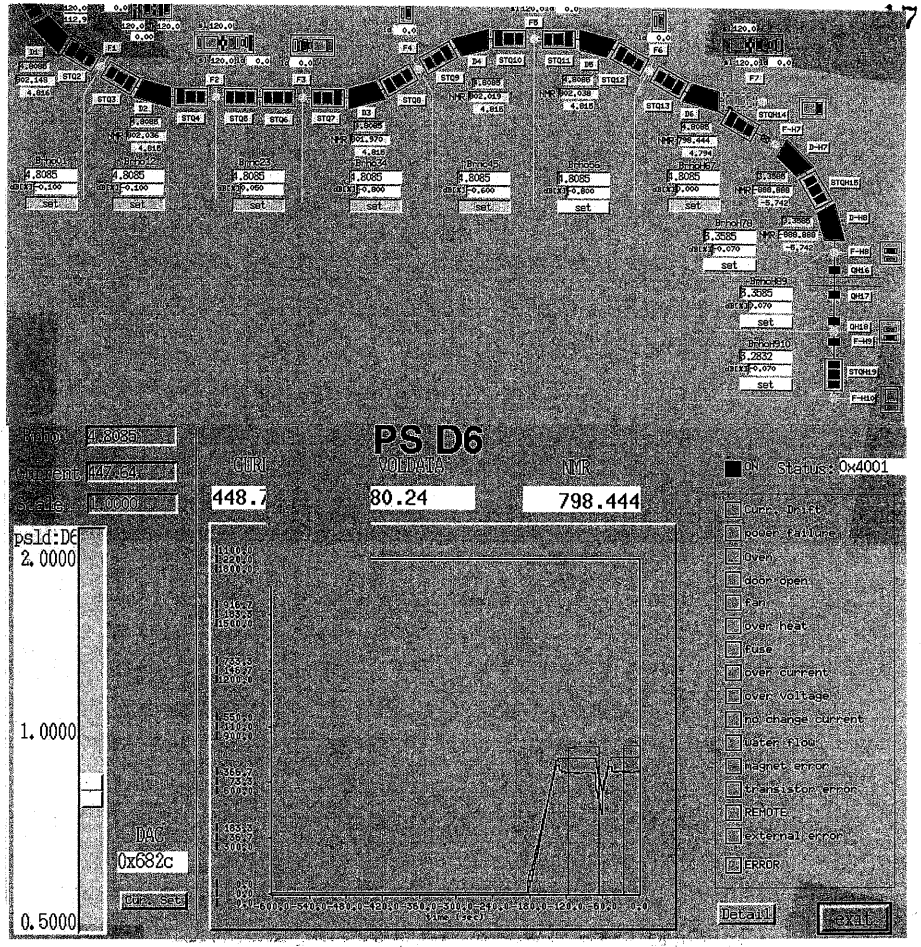
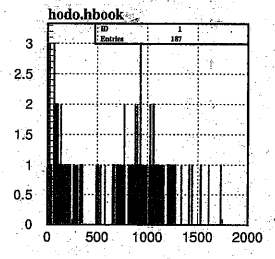
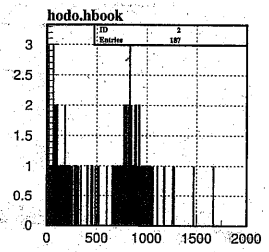


RUN 0404

2009/05/09 21.25



h1uA



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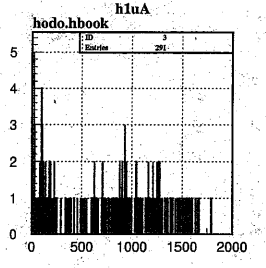

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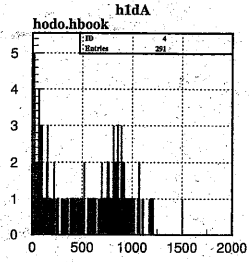
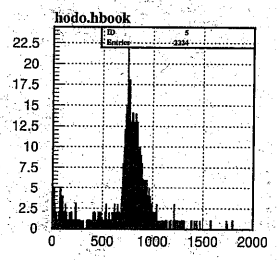


h2dA

2009/05/09 21.26



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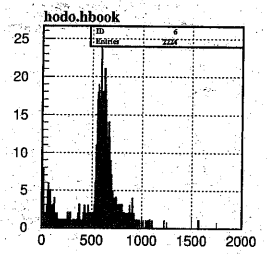

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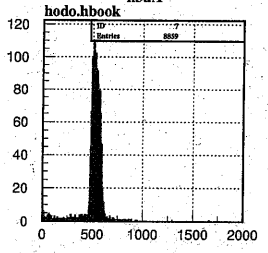

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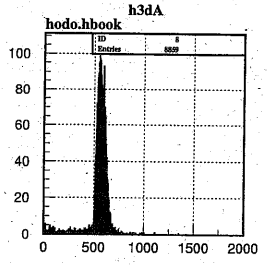
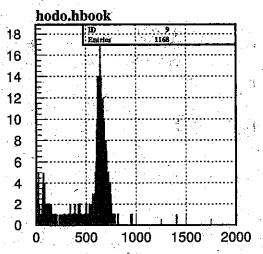
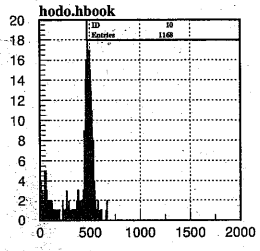


h4dA

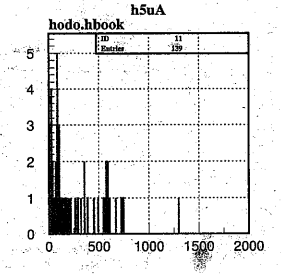
2009/05/09 21.23



h5uA



h5dA



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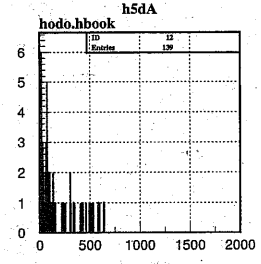

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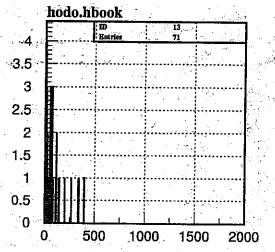
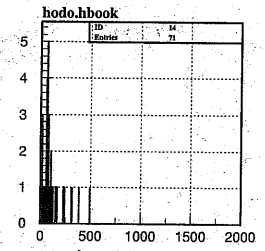
2009/05/09 21.26



h7uA



h7dA

30η

V_0 mV

$\frac{1}{3} V_0$

$\frac{30\times10^{-9}\times V_0\times10^{-3}}{100} = \frac{0.3 V_0}{3}\,pc = 0.1 V_0\,pc$

$500pc \times \frac{1750}{2000} = 188$

$V_0 \sim 2V$ w/o att.

RUN405

1600
800
1850
550

BDC F
FDC1 A
FDC2 F
FDC3 A

20k. ~~ดีขึ้น~~

RUN406

1650
850
1900
600

RUN407

1675
875
1925
625.

RUN408	1700,	900,	1950,	650
409	1725	925	1975	675
410	1750	950	2000	700
411	1775	975	2025	725
412	1800	1000	2050	750
413	1825	1025	2075	775
414	1850	1050	2100	800
415	1875	1075	2125	825
416	1900	1100	2150	850
417	1925	1125	2175	875
418				
419				
420				
421				

RUN1

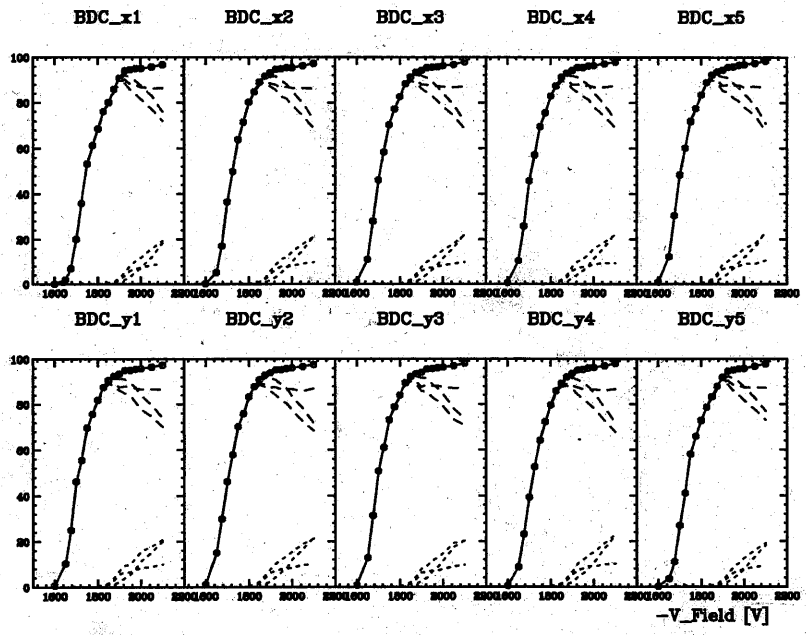
422.

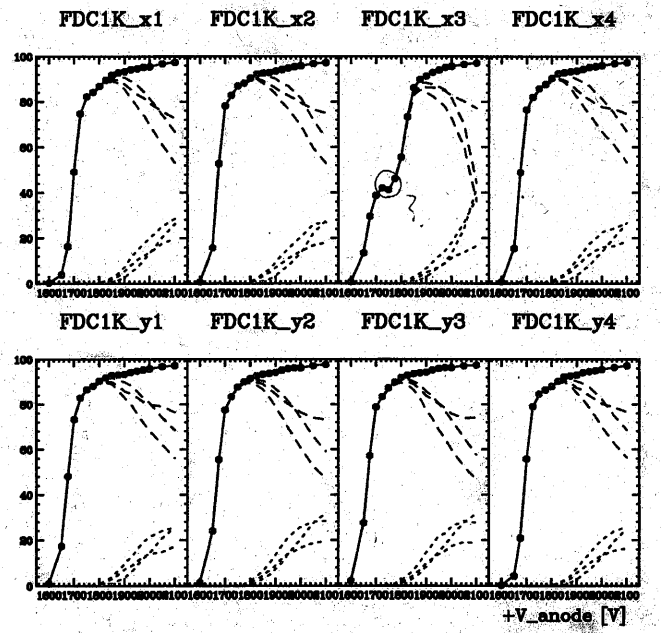
B	~~1500~~	~~1550~~	1600	1650	~~1400~~	1675	1700	1725	1750	1775
F1	~~700~~	~~750~~	800	850	900	875	900	925	950	975
F2	~~2000~~	~~1900~~	1850	1900	~~1450~~	1925	1950	1975 1238	2000 1254	2025 1270
F3	~~500~~	550	~~600~~	600	~~650~~	825	650	675	700	725

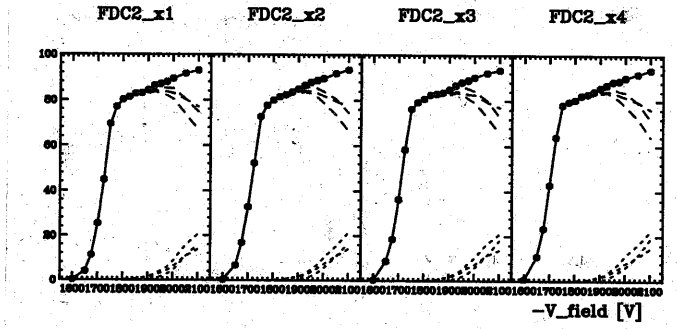
B	1800	1825	1850	1875	1900	1925	1950	1975	2000	2050
F1	1000	1025	1050	1075	1100	1125	1150	1175	1200	1250
F2	2050 1285	2075 1301	2100 1317	2125 1332	2150 1348	2175 1364	2200 1379	2225 1395	2250 1411	2300 1442
F3	750	775	800	825	850	875	900	925	950	1000

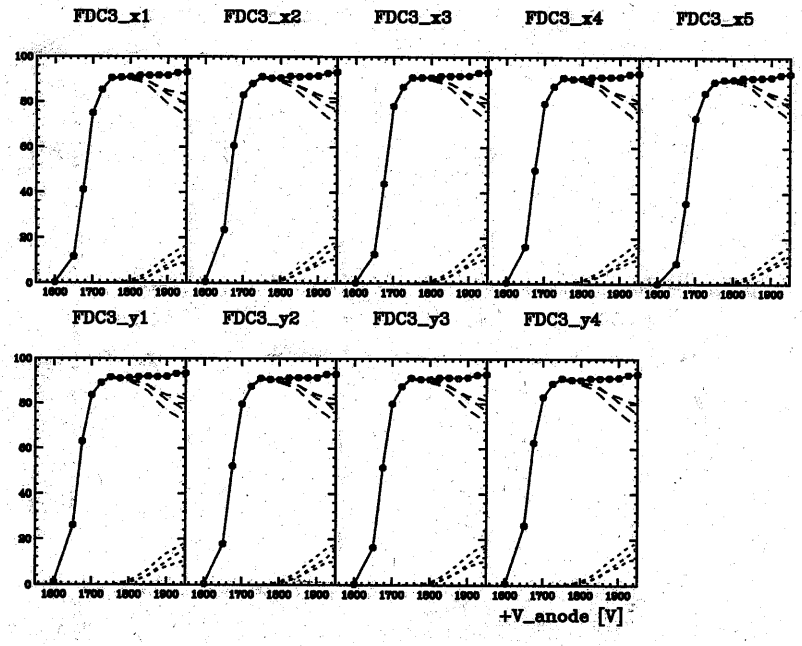
B	2100
F1	~~2300~~ 1300
F2	2350 1493
F3	1050

Gateをかけていなくて母集団に 2ケのまがりがある。









RUN423.

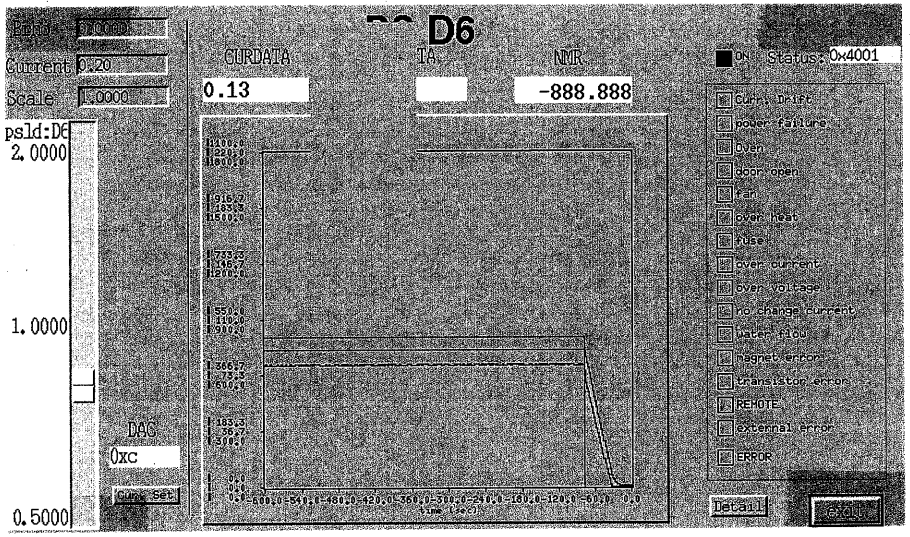
BDC 2050
FDC1 1150
FDC2 2300
FDC3 875

で 200k ほどためる。 → 170k でやめる。

diskoff する。

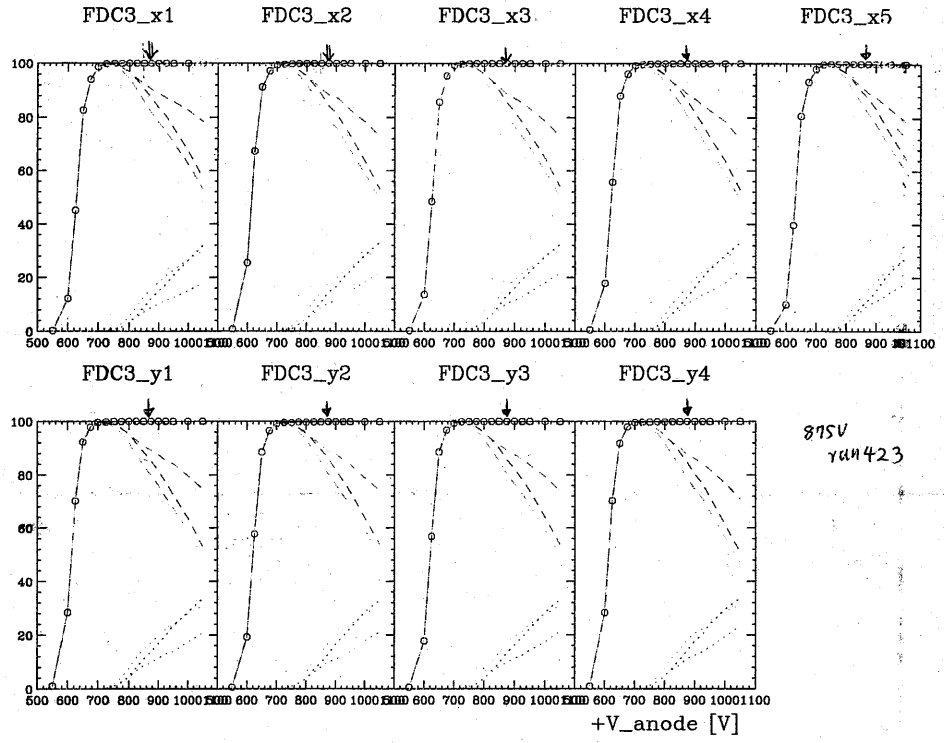
D6 → OA にする。

CAEN HV off
DC HV off
HOD 1380 − α ← 少し高い 10db 入っている。

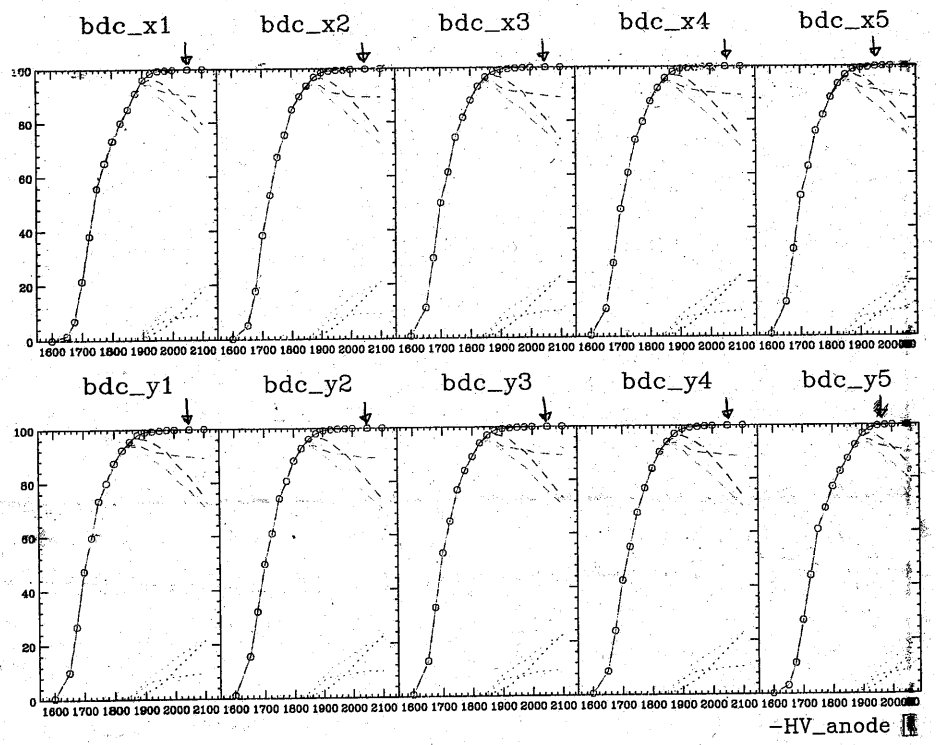


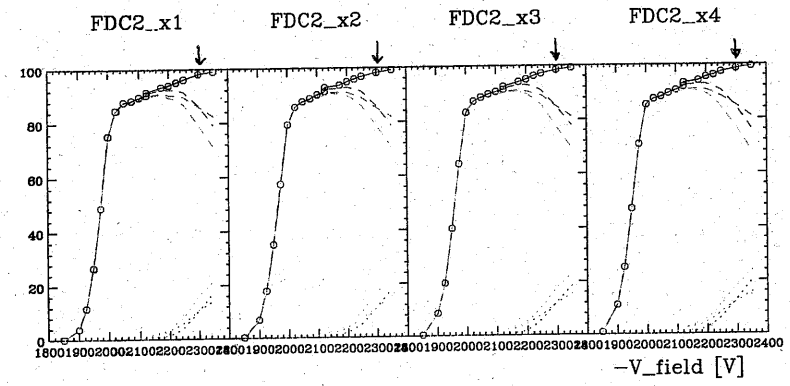
SFI2A/B
HOD
} にそれぞれ gate をかけた と ⇒次頁

以下 run423 の 解析



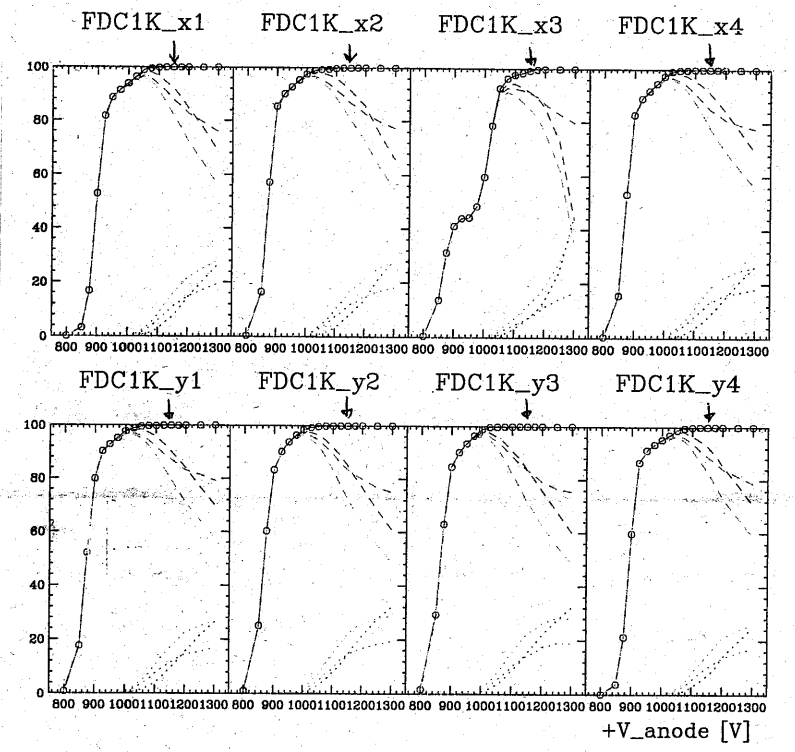
run423 z=7



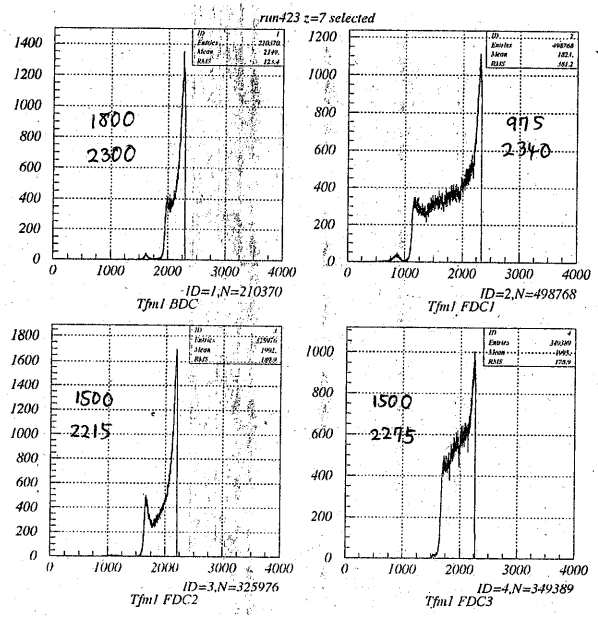


2300V
run
423

#1?



1150V
run423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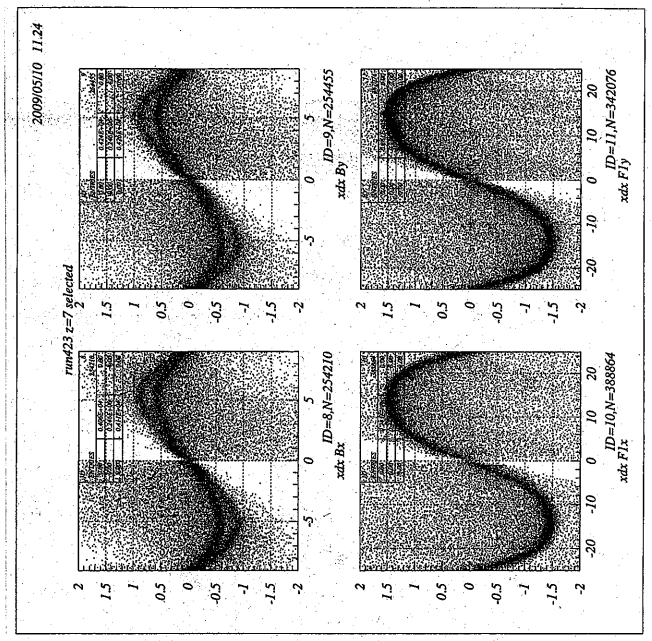
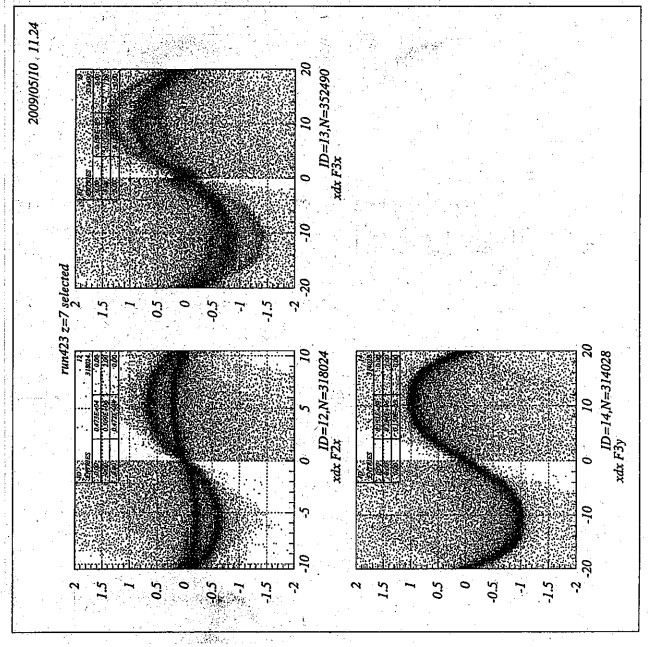
1800
2300
ID=1,N=210370
Tfm1 BDC
975
2340
ID=2,N=498768
Tfm1 FDC1
1500
2215
ID=3,N=325976
Tfm1 FDC2
1500
2275
ID=4,N=349389
Tfm1 FDC3


2009/05/10 11.24
run423 z=7 selected
ID=9,N=254455
xdx By
ID=11,N=342076
xdx F1y
ID=8,N=254210
xdx Bx
ID=10,N=388864
xdx F1x


2009/05/10 11.24
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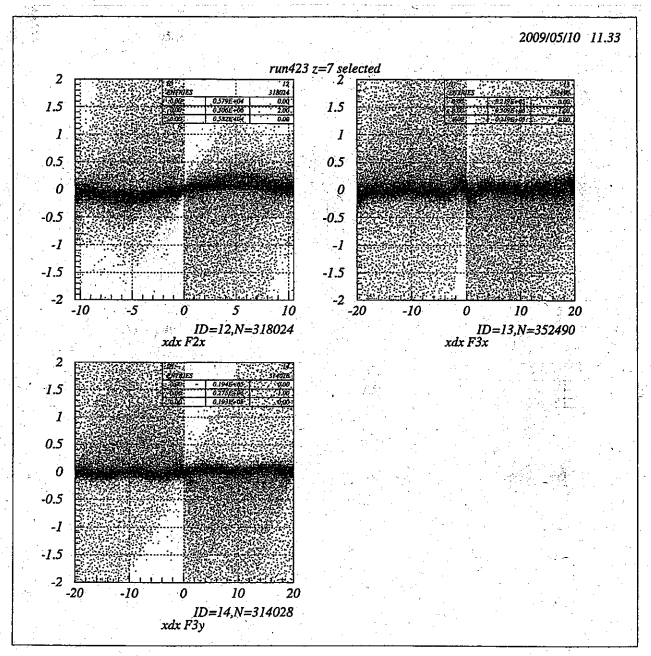
xdx F3x
ID=12,N=318024
xdx F2x
ID=14,N=314028
xdx F3y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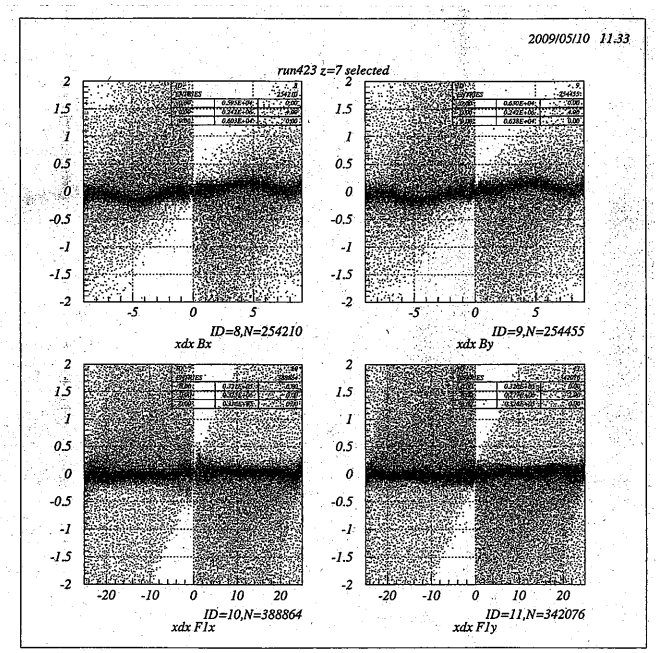
xdx F2x
ID=13,N=352490
xdx F3x
ID=14,N=314028
xdx F3y


2009/05/10 11.33
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xdx Bx
ID=9,N=254455
xdx By
ID=10,N=388864
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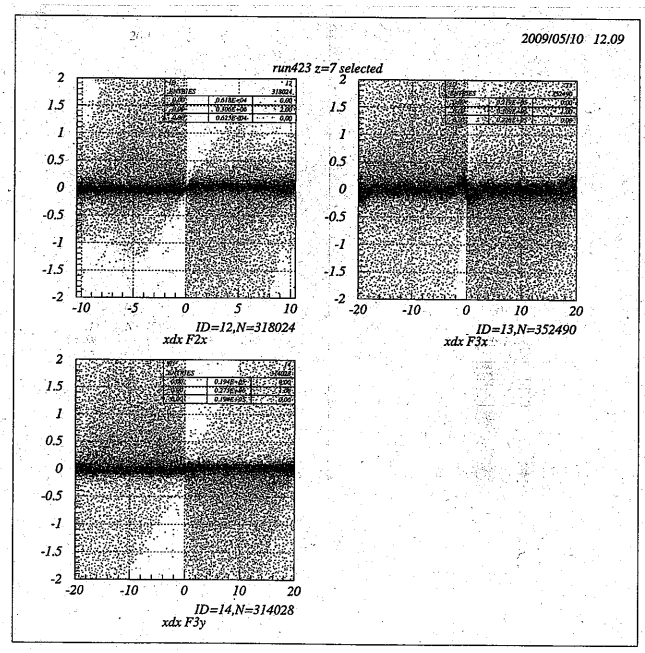
ID=11,N=342076
xdx F1y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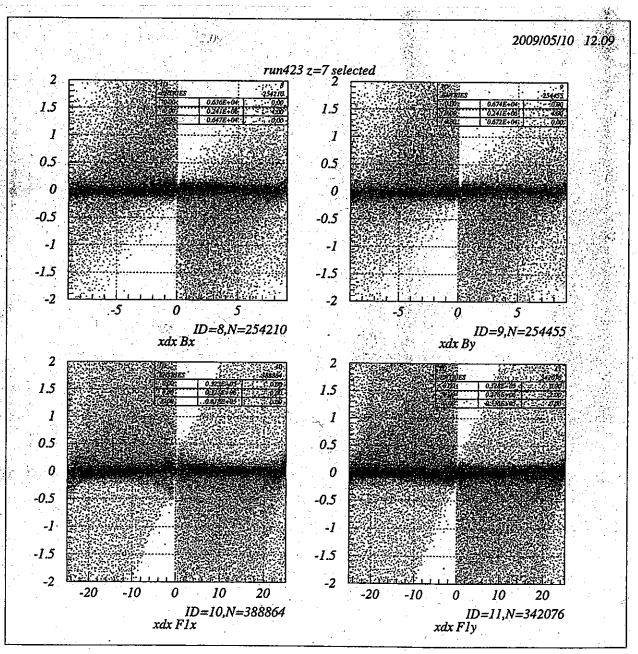
ID=13,N=352490
xdx F3x
ID=14,N=314028
xdx F3y


2009/05/10 12.09
run423 z=7 selected
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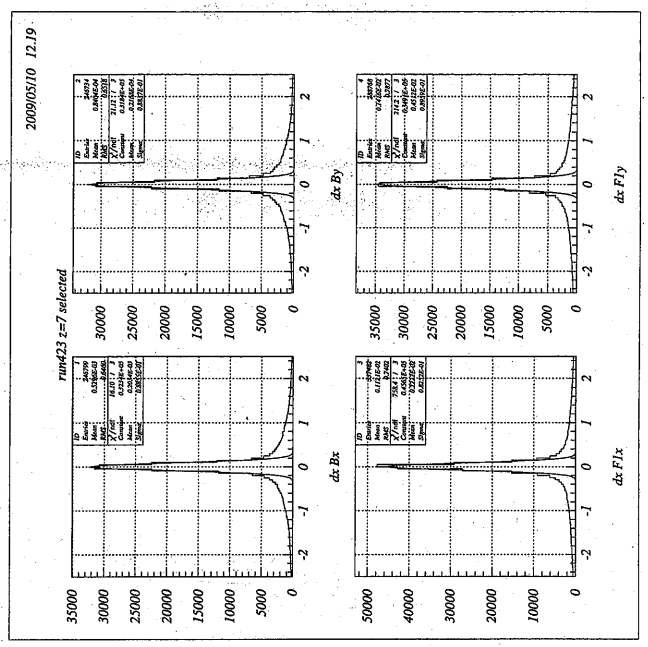
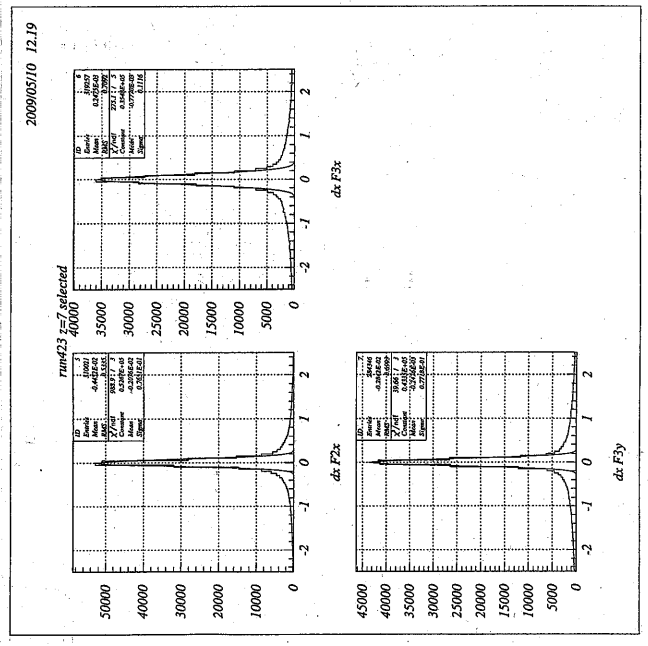
xdx Bx
ID=9,N=254455
xdx By
ID=10,N=388864
xdx F1x
ID=11,N=342076
xdx F1y





5/10(日) 午後

Time calibrator

run 424 ~100K

Range 640nsec

ΔT = 10nsec dispersion off

rate ~ 200 Hz

run 425 ~100K

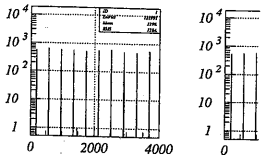
20 nsec/640nsec

print 次頁

Analys 2

① T_F3, F7 を入れる

② 新 calibration を入れる.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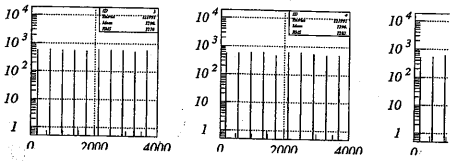
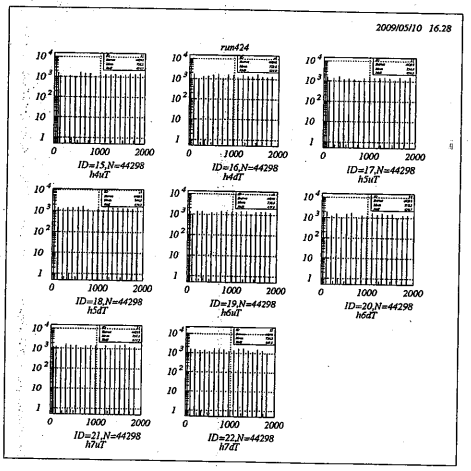
T F12AL

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ID=17,N=44298
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h5dT
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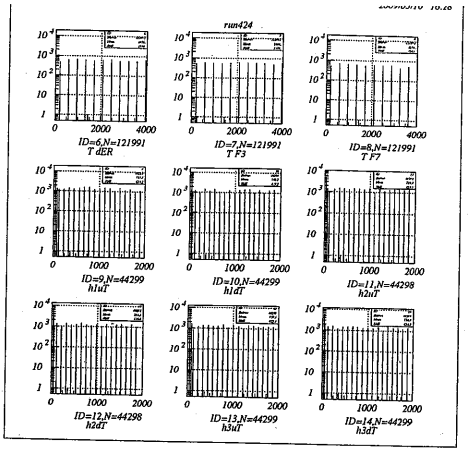
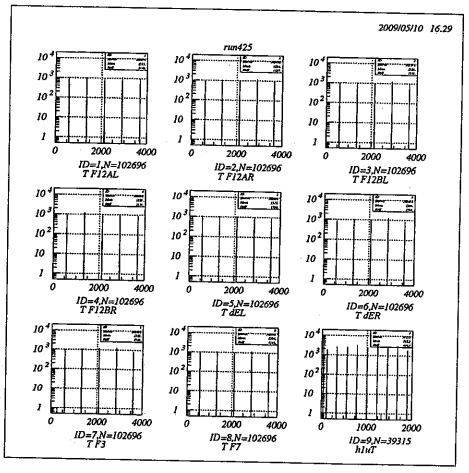
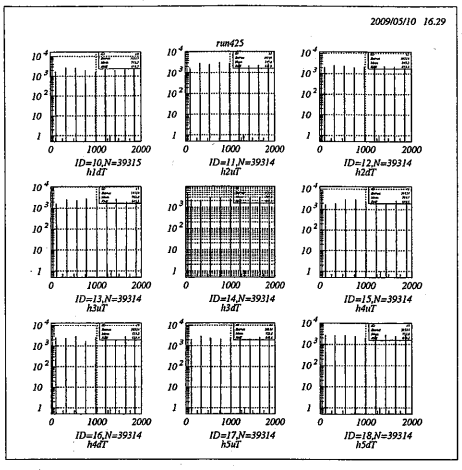
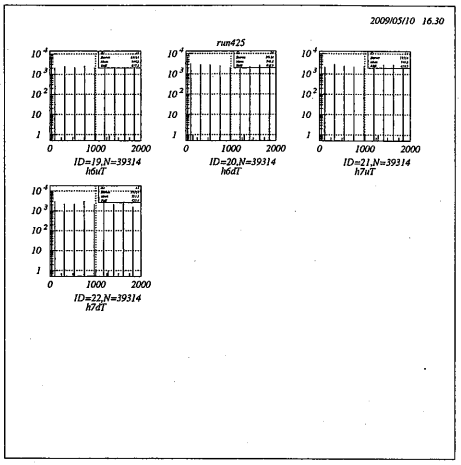
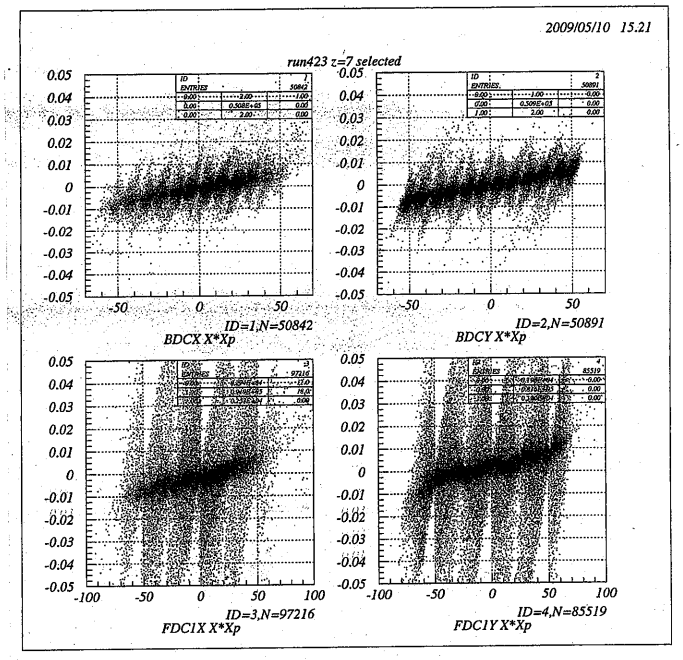
h6uT
ID=20,N=44298
h6dT
ID=21,N=44298
h7uT
ID=22,N=44298
h7dT


run424
ID=6,N=121991
T dER
ID=7,N=121991
T F3
ID=8,N=121991
T F7
ID=9,N=44299
h1uT
ID=10,N=44299
h1dT
ID=11,N=44298
h2uT
ID=12,N=44298
h2dT
ID=13,N=44299
h3uT
ID=14,N=44299
h3dT

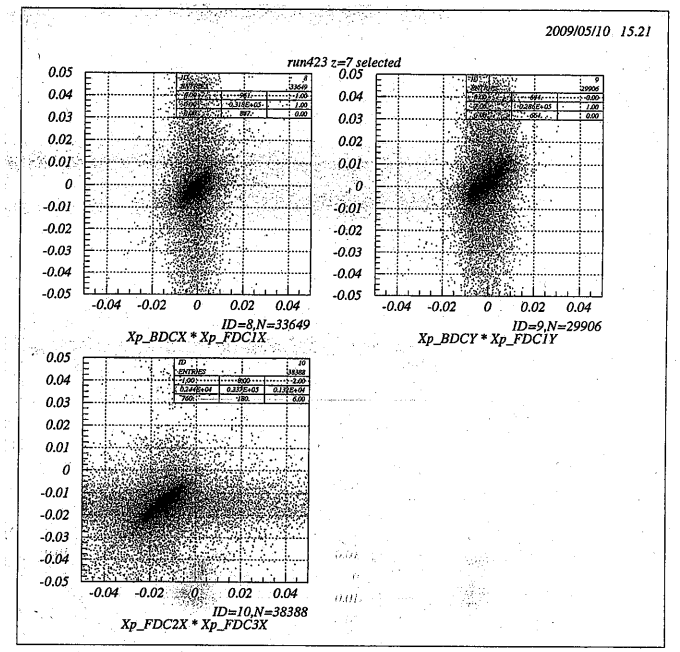

2009/05/10 16.29
run425
ID=1,N=102696
T F12AL
ID=2,N=102696
T F12AR
ID=3,N=102696
T F12BL
ID=4,N=102696
T F12BR
ID=5,N=102696
T dEL
ID=6,N=102696
T dER
ID=7,N=102696
T F3
ID=8,N=102696
T F7
ID=9,N=39315
h1uT

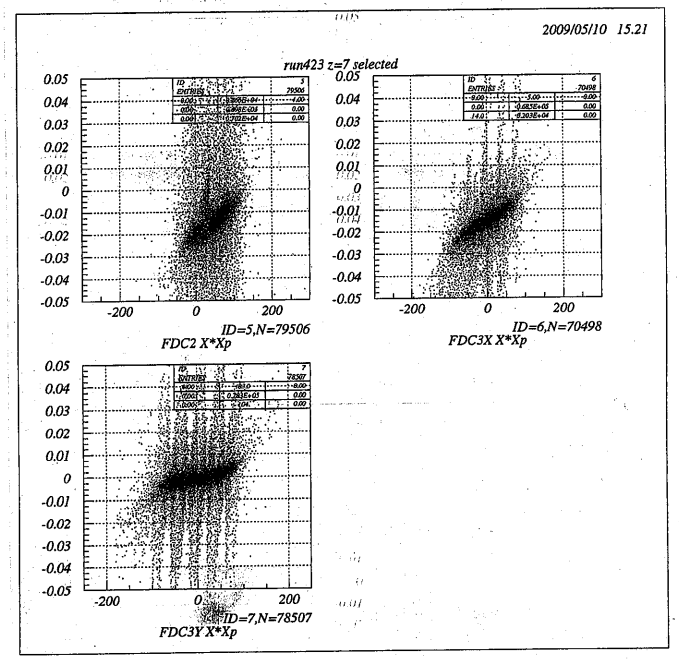

2009/05/10 16.29
run425
ID=10,N=39315
h1dT
ID=11,N=39314
h2uT
ID=12,N=39314
h2dT
ID=13,N=39314
h3uT
ID=14,N=39314
h3dT
ID=15,N=39314
h4uT
ID=16,N=39314
h4dT
ID=17,N=39314
h5uT
ID=18,N=39314
h5dT

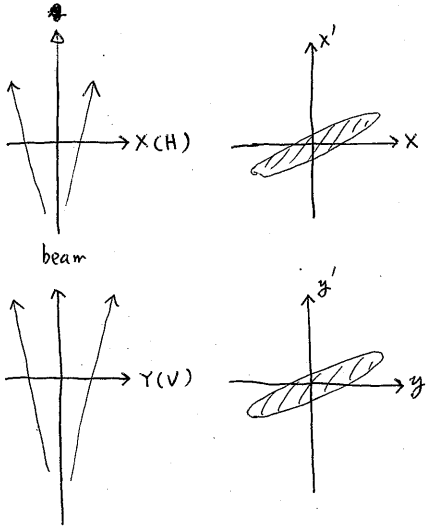

2009/05/10 16.30
run425
ID=19,N=39314
h6uT
ID=20,N=39314
h6dT
ID=21,N=39314
h7uT
ID=22,N=39314
h7dT

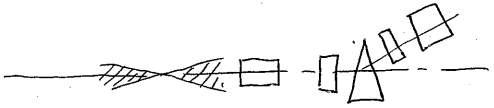


X X′ (H)
y y′ (V)

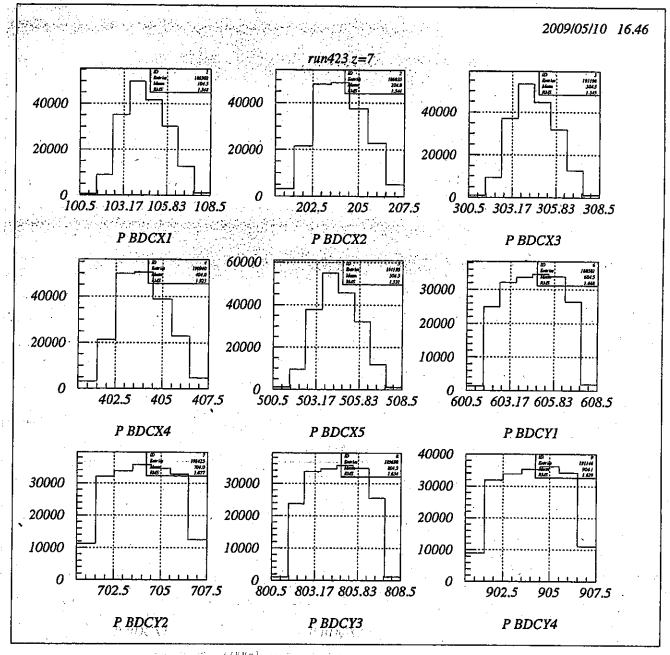


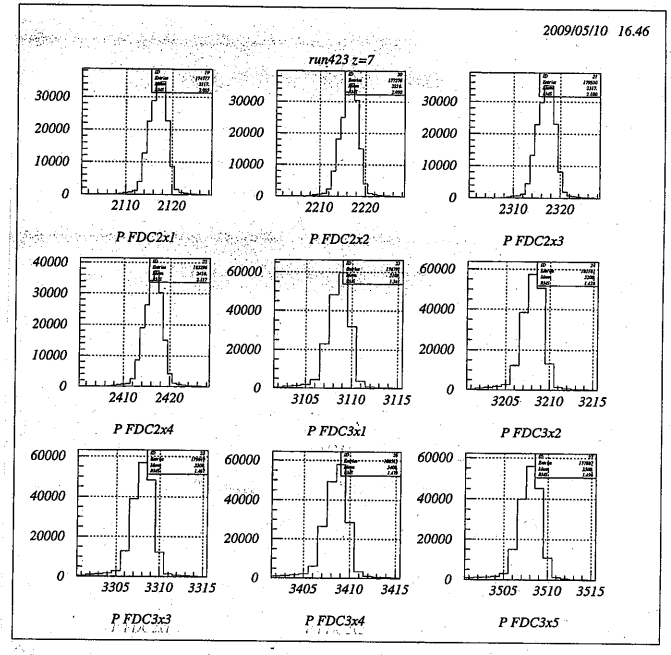


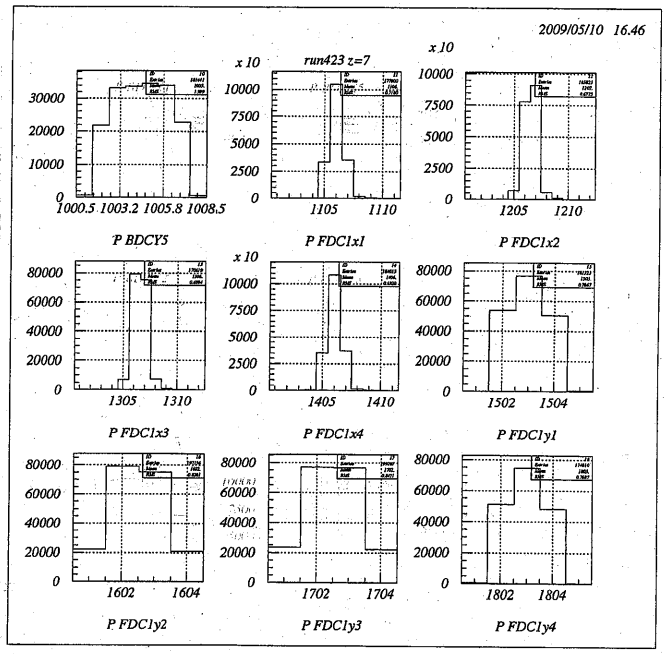


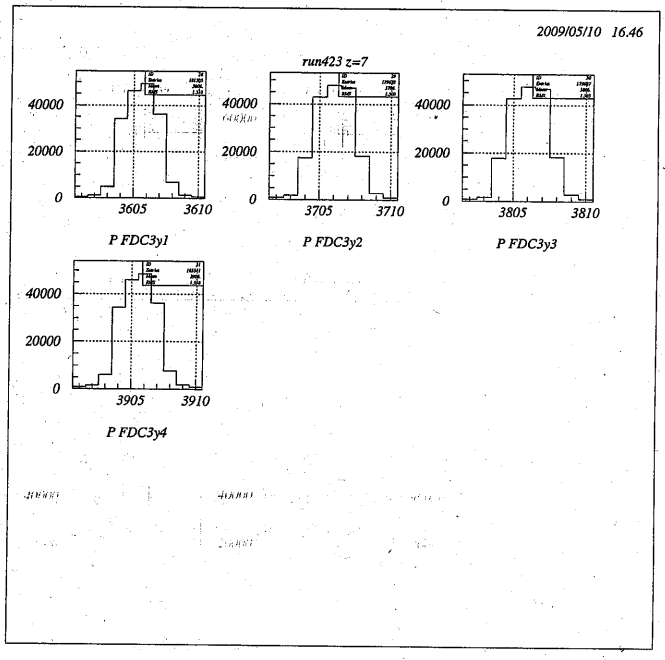


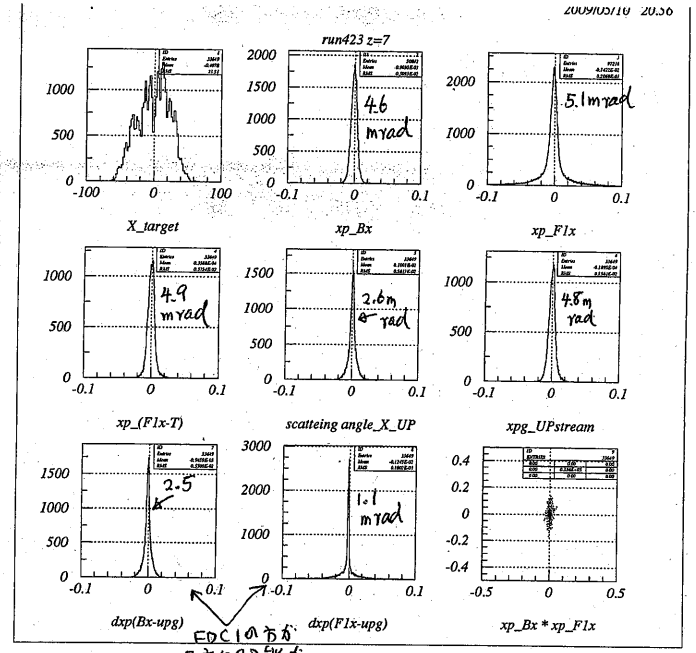
target
上流にfocusしている。


2009/05/10 16.46
run423 z=7
P BDCX1
P BDCX2
P BDCX3
P BDCX4
P BDCX5
P BDCY1
P BDCY2
P BDCY3
P BDCY4


2009/05/10 16.46
run423 z=7
P FDC2x1
P FDC2x2
P FDC2x3
P FDC2x4
P FDC3x1
P FDC3x2
P FDC3x3
P FDC3x4
P FDC3x5

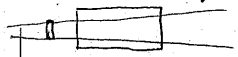

2009/05/10 16.46
run423 z=7
P BDCY5
P FDC1x1
P FDC1x2
P FDC1x3
P FDC1x4
P FDC1y1
P FDC1y2
P FDC1y3
P FDC1y4

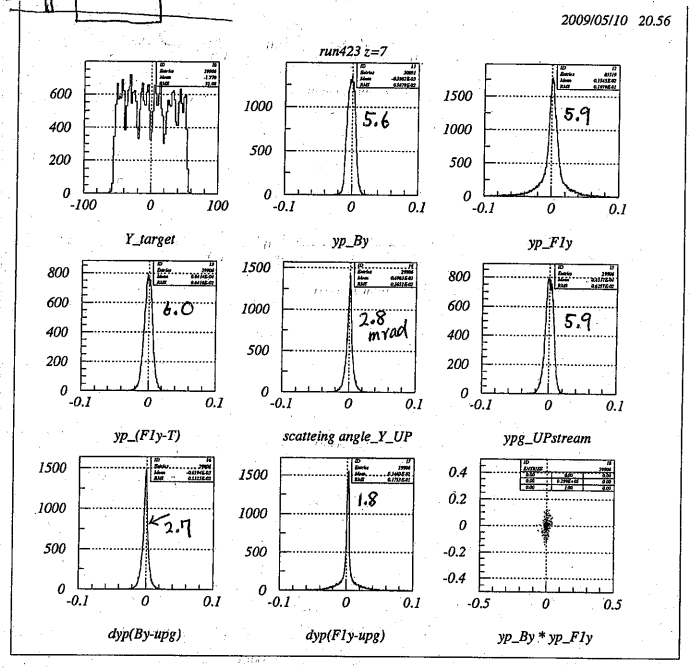

2009/05/10 16.46
run423 z=7
P FDC3y1
P FDC3y2
P FDC3y3
P FDC3y4

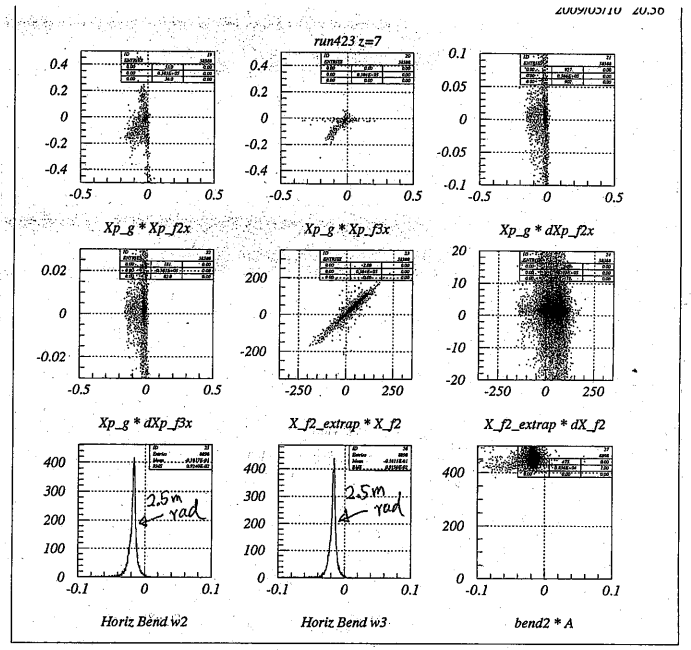


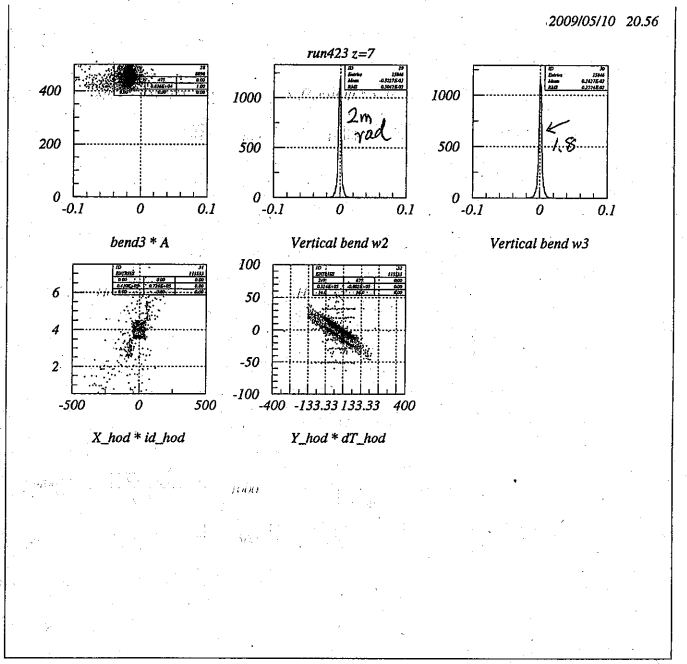
+racket

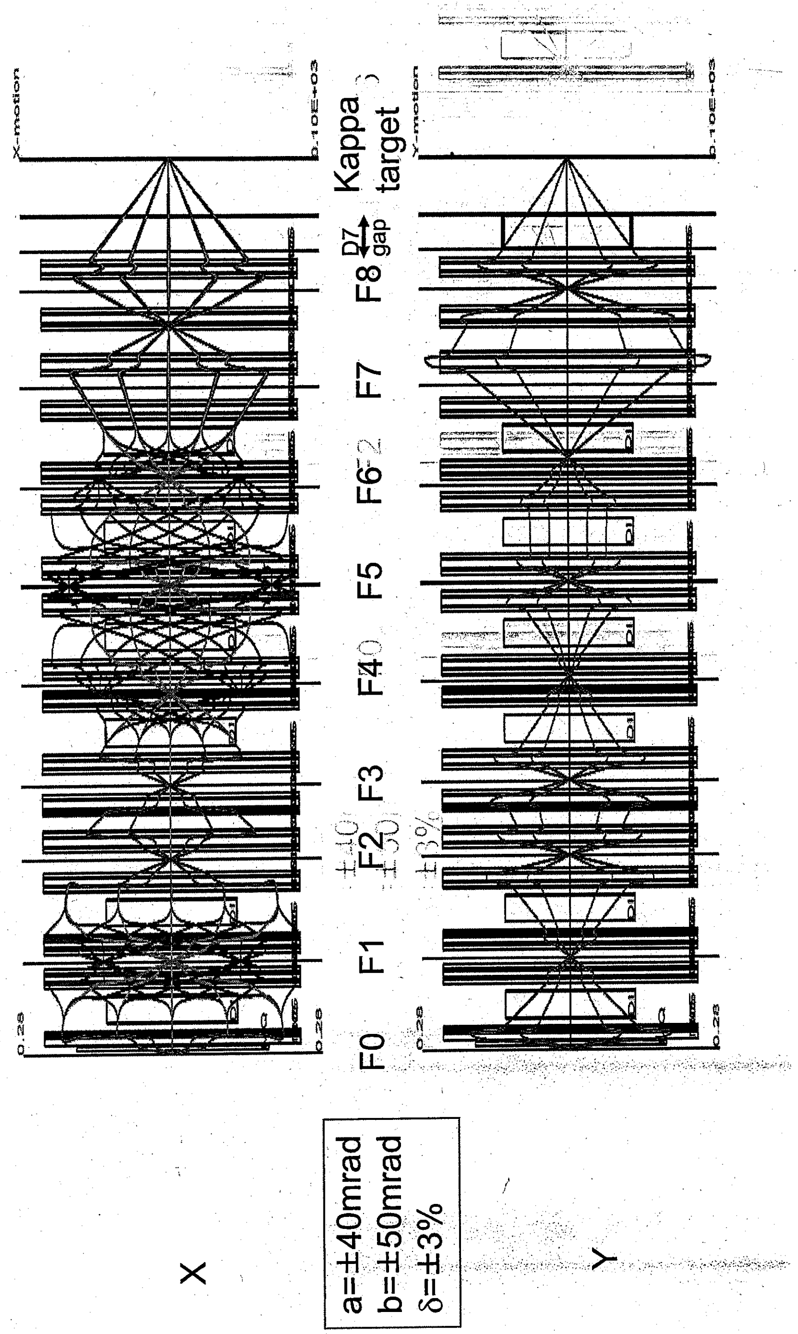
EDC1の方が
角度分解能が
良い???　Xも全く同じ傾向










Kappa
target
D7
gap
F8
F7
F6
F5
F4
F3
F2
F1
F0
X
Y
a=±40mrad
b=±50mrad
δ=±3%

竹田計算

倍率

角度

もってくもの

Camac アダプター

FDE3

hodoscope T ; ECL/NIM/ECL はいゆ

big rips との信号

digital rate meter 用 a bin ← V*D を上にひくて
hod - 下流 架台用の TWS cable

ケーブル 茶, 赤, グレー

USB cable usb extension

camac adapter ~2T

PC cooler + usb でんげん

30μm	~~W-R~~ Au-W(Re)	30μm	1770m,	990m, 2590m
		16μm	800m	800m 800m
	Au-W	40μm	1600m,	1100m, 3300m
		20μm	6T	
	80μm Au-Al	5	739m	
		6	749m	
		7	759m	
		4	500m	
		2	753m	
		1	783m	
		3	712m	

~~SM-HC01 Half crate 1~~
~~02 2~~
~~03 CC7700 1~~
~~04 CC7700 2 PCI 1~~
~~05 PCI 7700-2~~
~~06 PCI-2~~

~~07 16ch ADC 1~~
~~08 2~~
~~09 3~~

50まで

-BB 01 オミ01 ✓

05 5 ✓

15~18

(11)

✓N-TM-605 2ch 20-Out Fanout ×8 SM-HM(67-74) ✓

✓N-CP-218 ×1 8ch Prescaler 75

Phillips 730 Wdisc ×1 76

705 8ch disc ×4 77, 78, 79, 80

708 8ch disc (300M) ×4, 81, 82, 83, 84

756 LU ×2 85, 86

740 L-FIFO ×4 87, 88, 89, 90

Fuji TKY-0245 ×4 91, 92, 93, 94

3fold Logic unit テクノ *7 N-TM103 95, 96, 97, 98, 99, 100, 101

16ch CSADC repic RPC-022 C001, C002, C003

CC7700 04, 05
-PCI-IF 06, 07

half crate PS-6000 08, 09

FDC3 移動時
G10の穴を大きく.
従来調キコウ

@ CH2 target 作る.
5mm
10mm
15mm

@time calibrator

P051 (Carbon beam)

hod 1380 - α
ΔEL/R 1650, 1550 (Ampなし?) → 1.3kV, 1.25kV
BDC 1750?
FDC1K F2600/A1200

@ HIMAC Log note をもう一セット
printer へ とれる?

FDC3のwire位置
find TDR subroutines