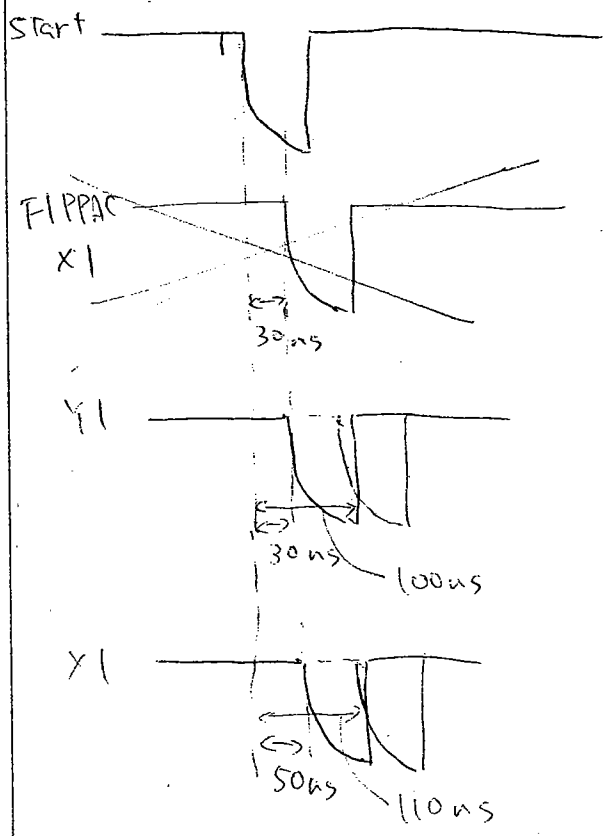
RIPS Log
6/4 ~ 6/8
2004

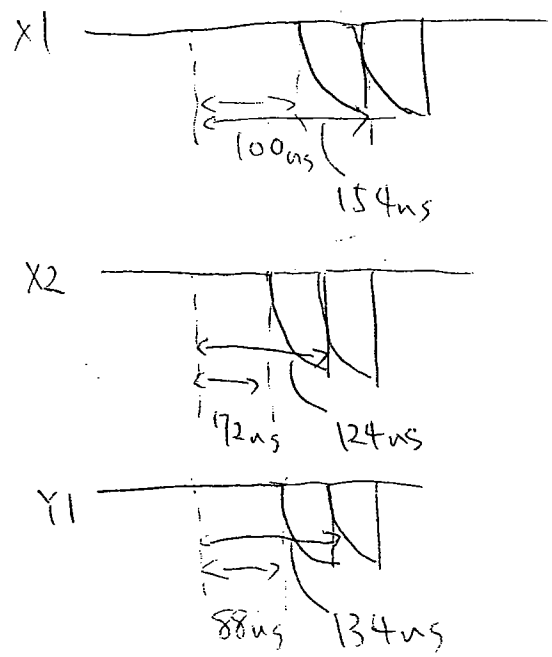
- adjustment for

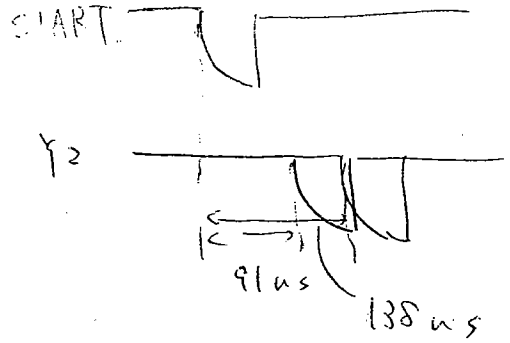
F1PPAC

F2PL trigger

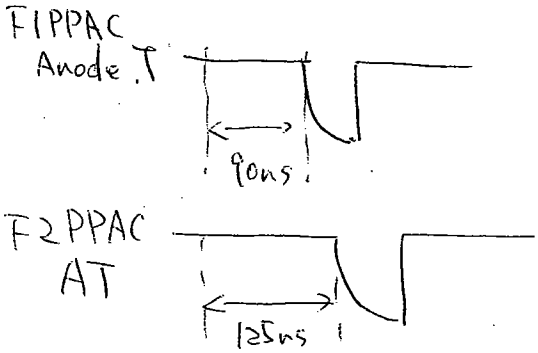


F2PPAC

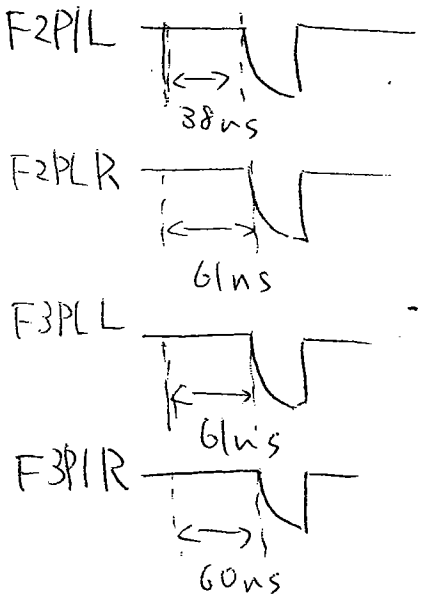




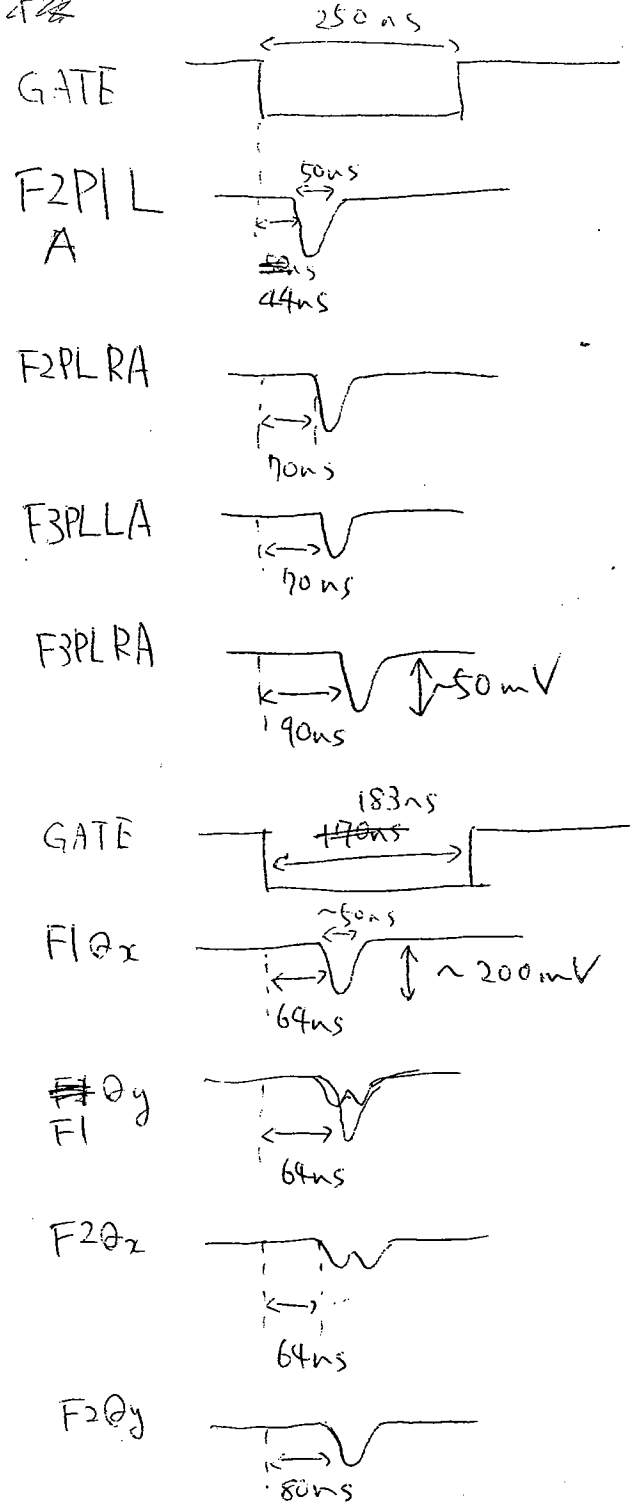
F1, F2 PPAC x,y O.K



• PLASTIC



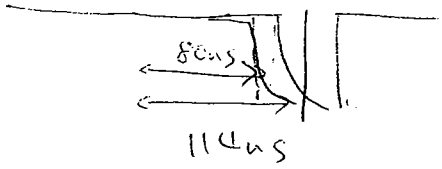
F2


250 ns
GATE
F2PILA
50ns
44ns
F2PLRA
70ns
F3PLLA
70 ns
F3PLRA
50 mV
190ns
183ns
GATE
~50ns
F1θx
~200mV
64ns
F1θy
64ns
F2θx
64ns
F2θy
80ns

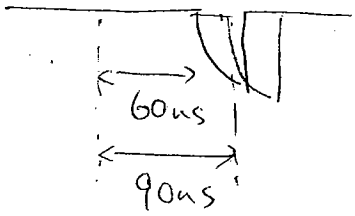
F3PPAC

START

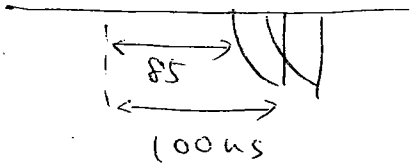
F3a X1



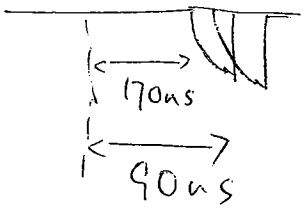
F3a X2



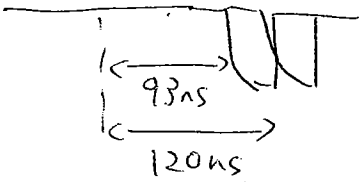
F3b Y1



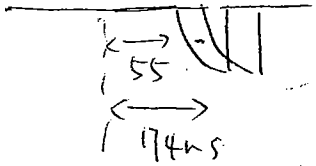
F3a Y2



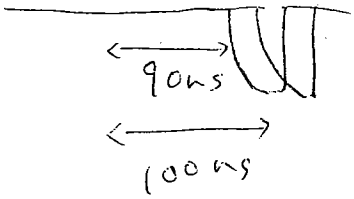
F3b X1



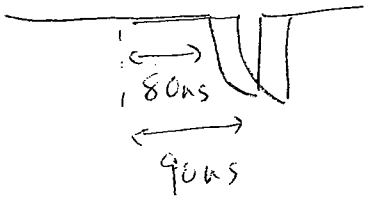
F3b X2

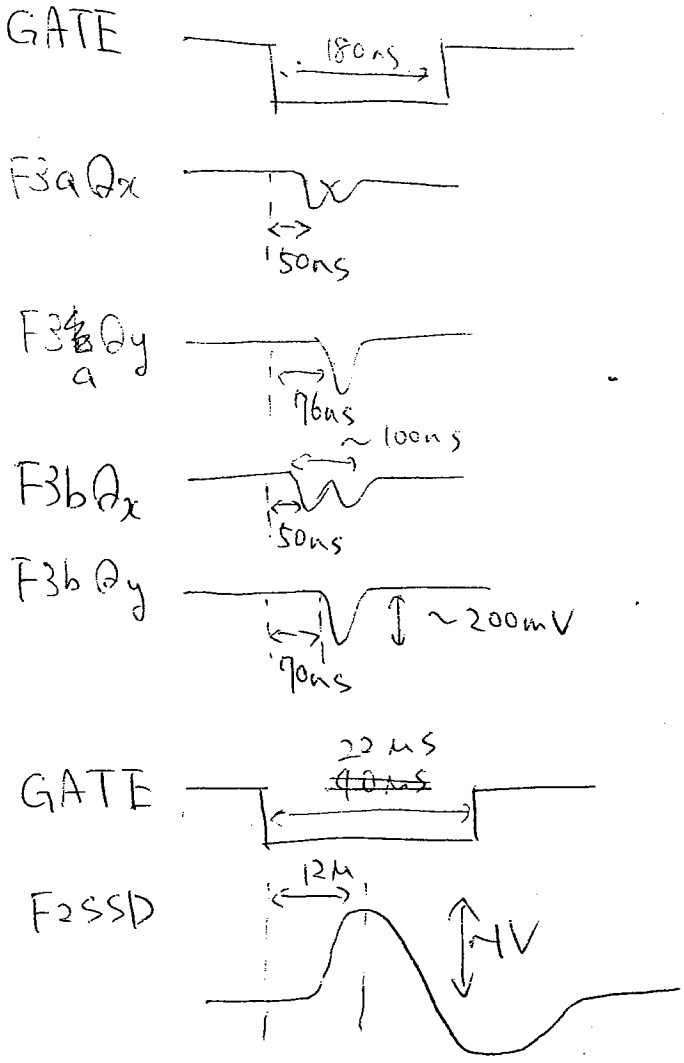


F3b Y1



F3b Y2




GATE
180ns
F3aQx
150ns
F3aQy
76ns
~100ns
F3bQx
50ns
F3bQy
~200mV
70ns
22 μs
GATE
12μ
F2SSD
4V

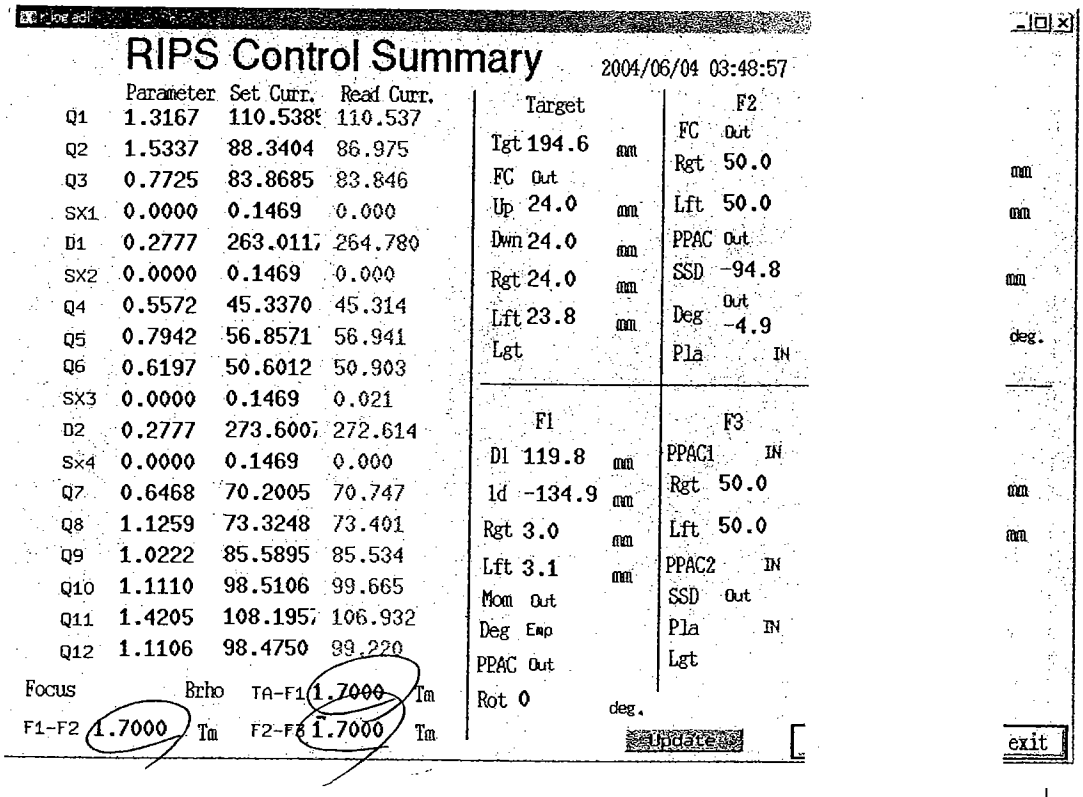
3:34 F2 ΔΔD ⇒ OUT

PID using Si stack

~3:37 change Bp 1.8 → 1.7 1/2 (0.472 T) (5% down) set

D1 : 473.092 mT

D2 : 473.498 mT

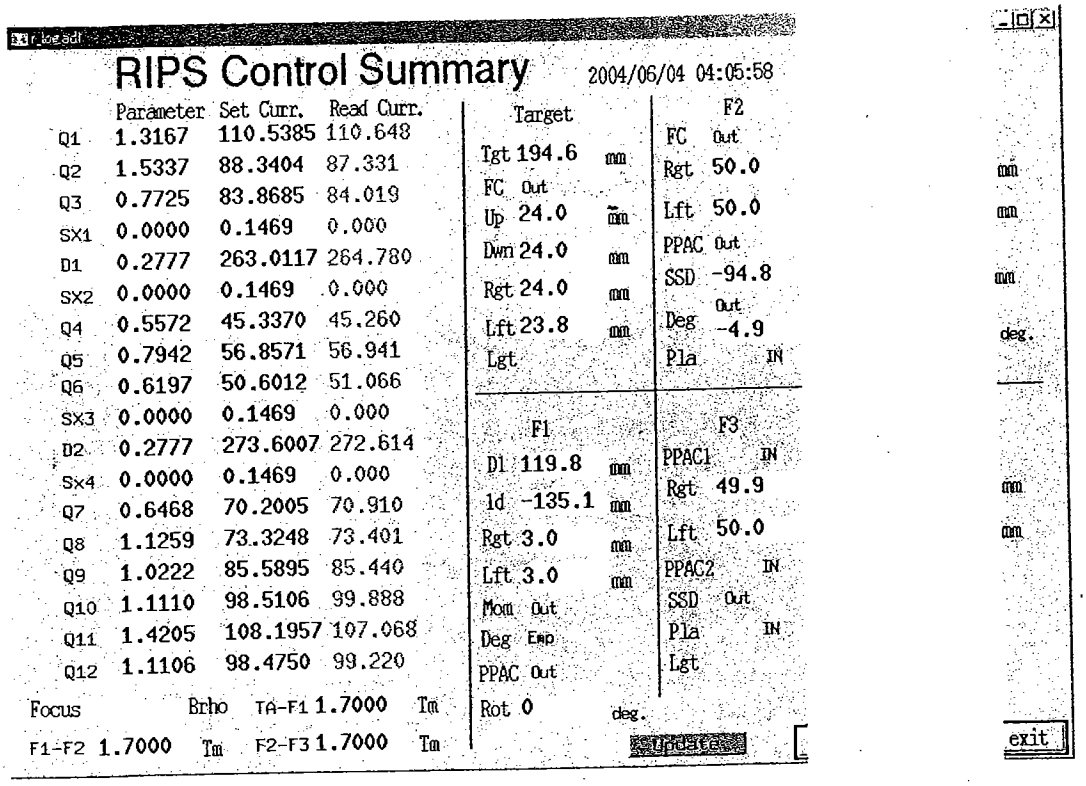


3:50 F2 plastic 1900 V (HV)

⇓

2000 V (current L 928 mA, R 927 mA)

F3 pla 1500 V



RIPS Control Summary 2004/06/04 04:05:58

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	110.5385	110.648
Q2	1.5337	88.3404	87.331
Q3	0.7725	83.8685	84.019
SX1	0.0000	0.1469	0.000
D1	0.2777	263.0117	264.780
SX2	0.0000	0.1469	0.000
Q4	0.5572	45.3370	45.260
Q5	0.7942	56.8571	56.941
Q6	0.6197	50.6012	51.066
SX3	0.0000	0.1469	0.000
D2	0.2777	273.6007	272.614
Sx4	0.0000	0.1469	0.000
Q7	0.6468	70.2005	70.910
Q8	1.1259	73.3248	73.401
Q9	1.0222	85.5895	85.440
Q10	1.1110	98.5106	99.888
Q11	1.4205	108.1957	107.068
Q12	1.1106	98.4750	99.220

Focus Brho TA-F1 1.7000 Tm
F1-F2 1.7000 Tm F2-F3 1.7000 Tm

Target
Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1
D1 119.8 mm
Id -135.1 mm
Rgt 3.0 mm
Lft 3.0 mm
Mom Out
Deg Exp
PPAC Out
Rot 0 deg.

F2
FC Out
Rgt 50.0 mm
Lft 50.0 mm
PPAC Out
SSD -94.8 mm
Deg Out -4.9 deg.
Pla IN

F3
PPAC1 IN
Rgt 49.9 mm
Lft 50.0 mm
PPAC2 IN
SSD Out
Pla IN
Lgt

Update

exit

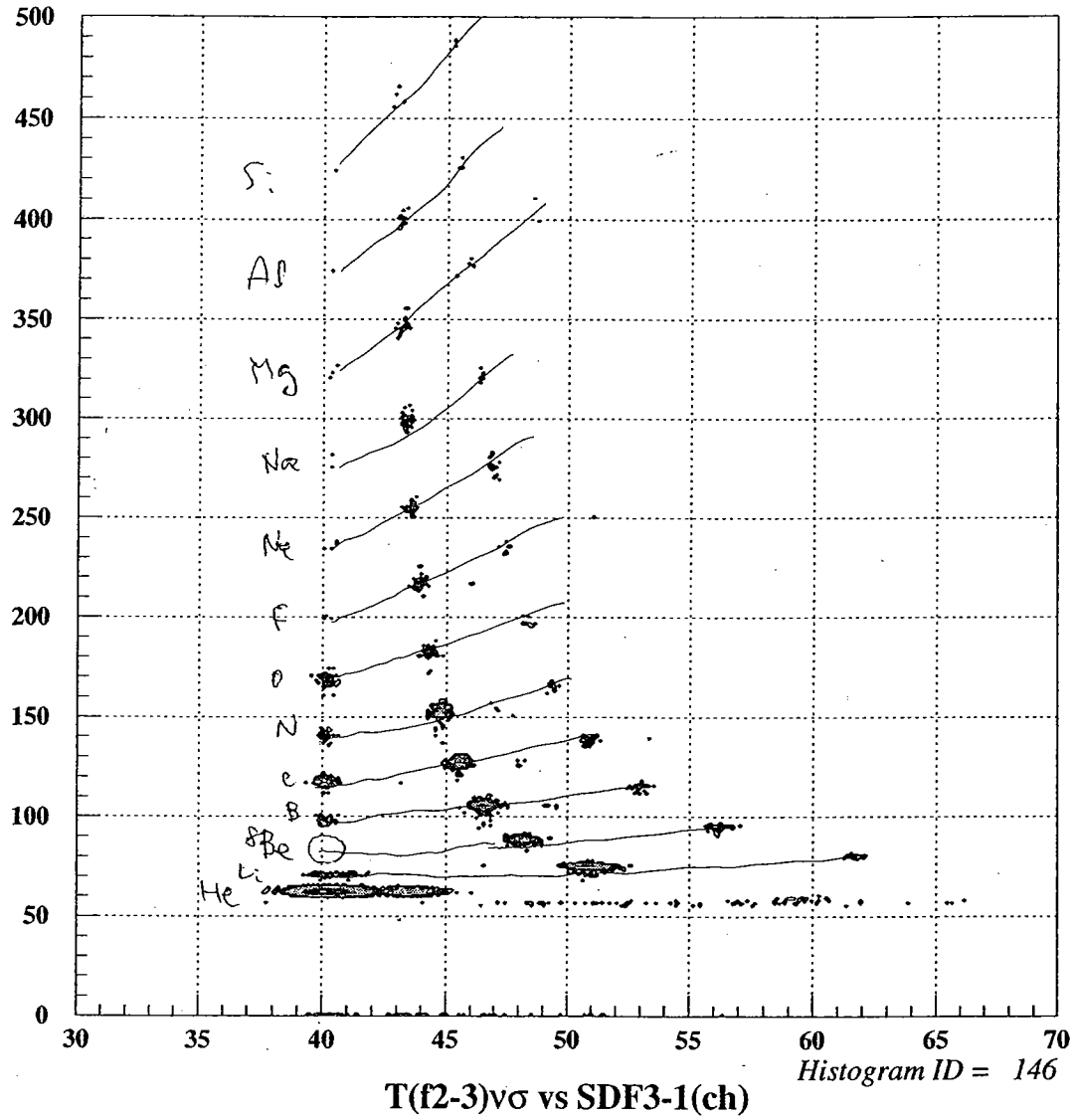
D1 : 473.028

D2 = 473.183

			HV	current (A)
F2	pla	L	2000 (V)	928 (nA)
		R	2000	927
F3		L	1800	835
		R	1800	829

~~Date~~

This set is default.



D1 = 473.028

D2 = 473.382

BP = 1.7 Tm

F2 SSD out

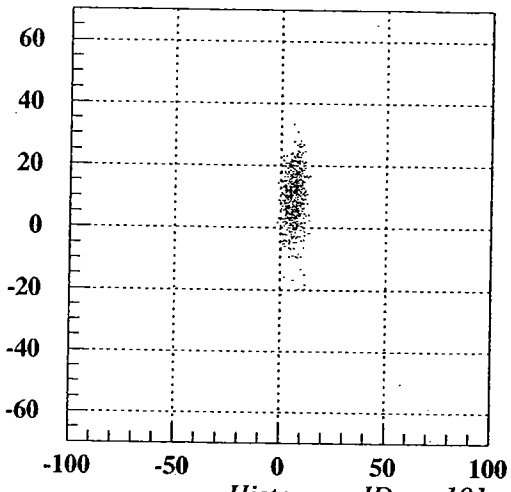
F2 pla trig

F2 pla 2000 V
2000 V

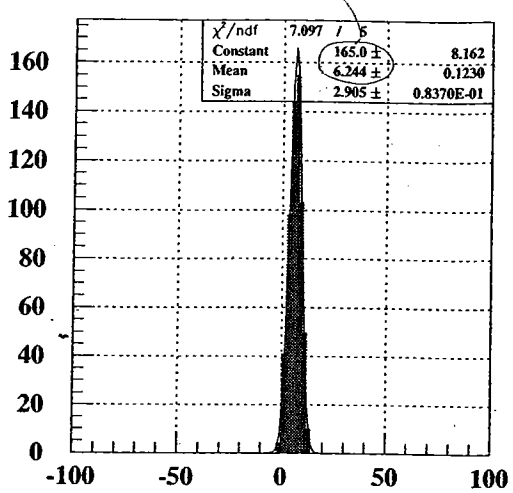
F3 pla 1800
1800

9

F1 shift ≈ ±3mm



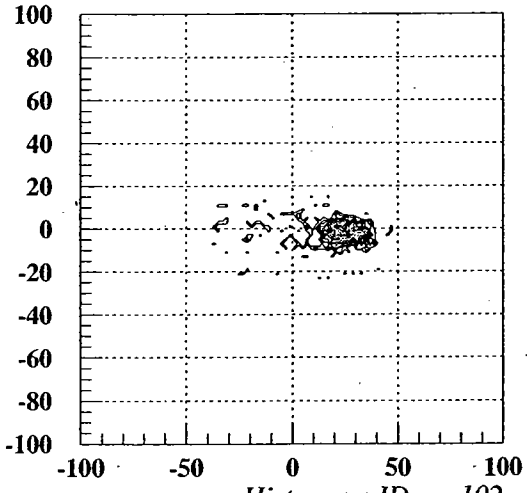
F1PPAC μμ



Prox.(F1PPAC μμ)

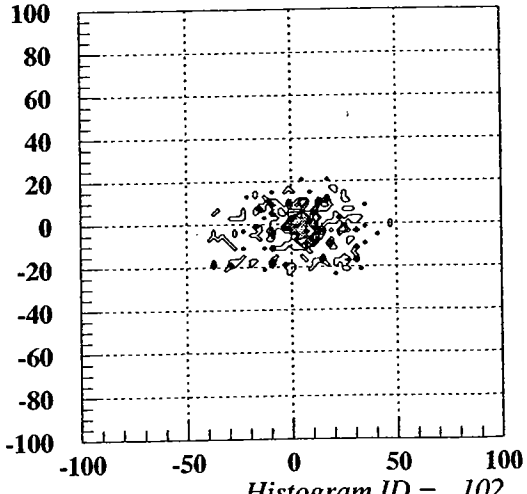
F1 PPAC ⇒ out

all F1 detectors are out



F2PPAC μμ

w/F1PPAC



F2PPAC μμ

w/o F1PPAC

position of center shift due to the energy loss at F1PPAC

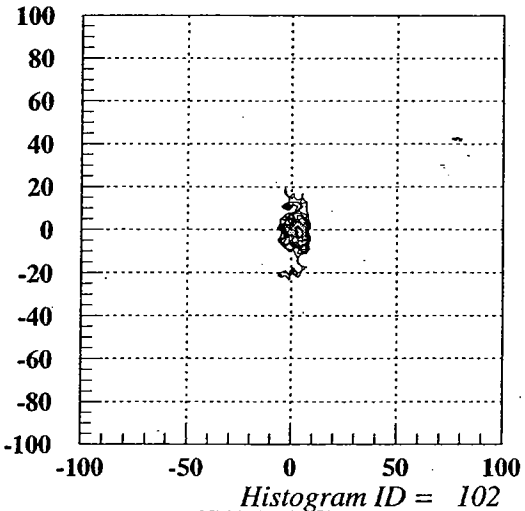
Si current

dE	95.3 [V]	0.14 [μA]
dE1	95.1	0.08
2	95.2	0.13
3	95.2	0.09
4	95.4	0.20

PPACs

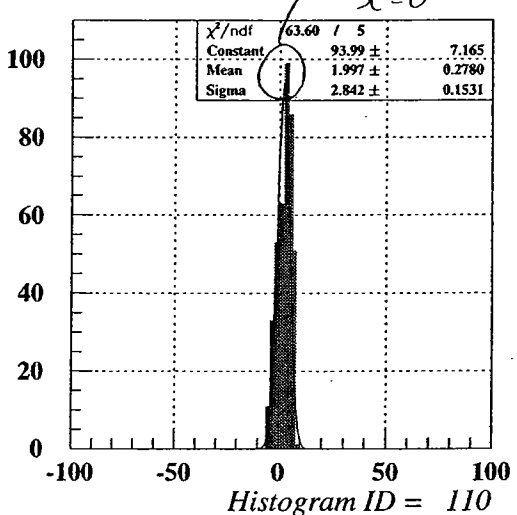
F1	−750 [V]	0.02 [μA]
F2	−752 [V]	0.00
F3a	−756	0.00
F3b	−756	0.01

F2 slit ±5mm



F2PPAC μμ

real x=0



Prox.(F2PPAC μμ)

4-11 Attenuator now

LINAC $\boxed{\frac{1}{100} \text{ only}}$

4-13 New Setting for beam spot adjusting

Tgt : Tgt ⇒ out

F1 : all detectors are out

F2 : PPAC (E-pla) in

other out

F3 : PPAC 1, 2, pla in.

Mag : D1 3.3274 Tm (0.9242 T) ⇒ 923.356 ;

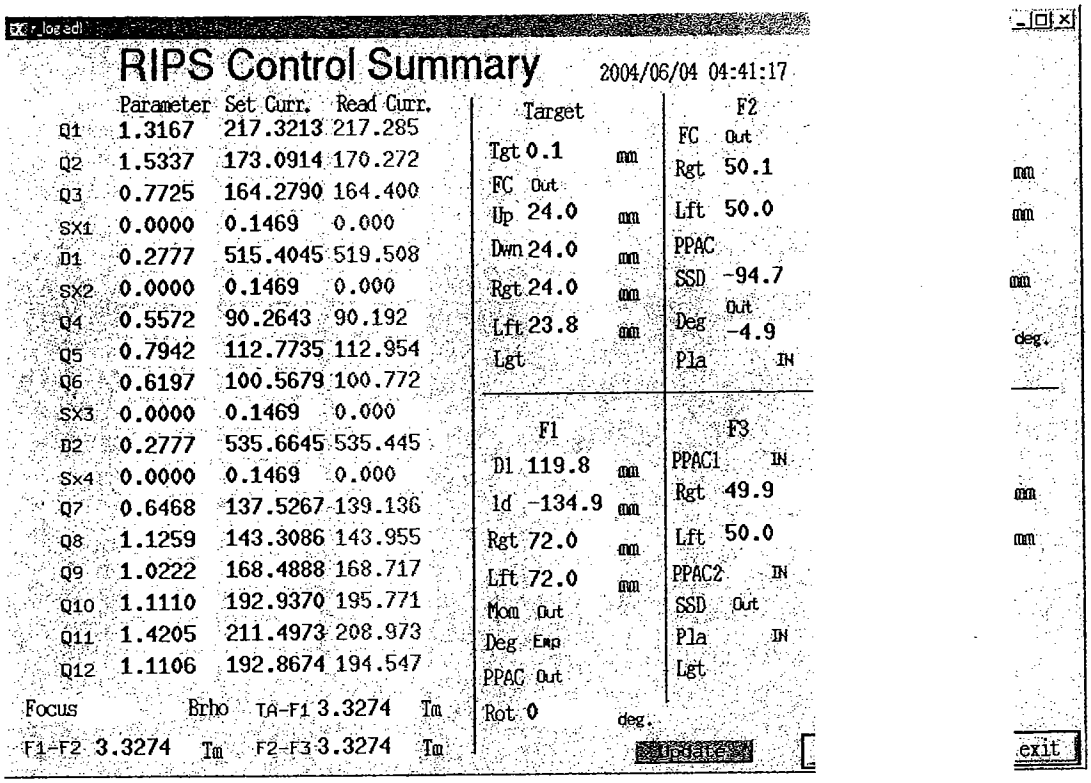
D2 " " 924.056 .

Ta " "

set read

F1 slit : ±50 mm

F2 slit : ±72 mm) wide open


RIPS Control Summary
2004/06/04 04:41:17
Parameter Set Curr. Read Curr.
Q1 1.3167 217.3213 217.285
Q2 1.5337 173.0914 170.272
Q3 0.7725 164.2790 164.400
SX1 0.0000 0.1469 0.000
D1 0.2777 515.4045 519.508
SX2 0.0000 0.1469 0.000
Q4 0.5572 90.2643 90.192
Q5 0.7942 112.7735 112.954
Q6 0.6197 100.5679 100.772
SX3 0.0000 0.1469 0.000
D2 0.2777 535.6645 535.445
Sx4 0.0000 0.1469 0.000
Q7 0.6468 137.5267 139.136
Q8 1.1259 143.3086 143.955
Q9 1.0222 168.4888 168.717
Q10 1.1110 192.9370 195.771
Q11 1.4205 211.4973 208.973
Q12 1.1106 192.8674 194.547
Focus Brho TA-F1 3.3274 Tm
F1-F2 3.3274 Tm F2-F3 3.3274 Tm
Target
Tgt 0.1 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt
F1
D1 119.8 mm
Id -134.9 mm
Rgt 72.0 mm
Lft 72.0 mm
Mom Out
Deg Emp
PPAC Out
Rot 0 deg.
Update
F2
FC Out
Rgt 50.1 mm
Lft 50.0 mm
PPAC
SSD -94.7 mm
Deg Out -4.9 deg.
Pla IN
F3
PPAC1 IN
Rgt 49.9 mm
Lft 50.0 mm
PPAC2 IN
SSD Out
Pla IN
Lgt
exit

4:34

Now Condition of Attenuation

Ion Source (slit) $\frac{1}{100}$ in

LINAC $\frac{1}{100}$ in

other full except $\frac{1}{300}$

F1 PPAC ⇒ in

Check the F1 PPAC's image

~ 1k cps

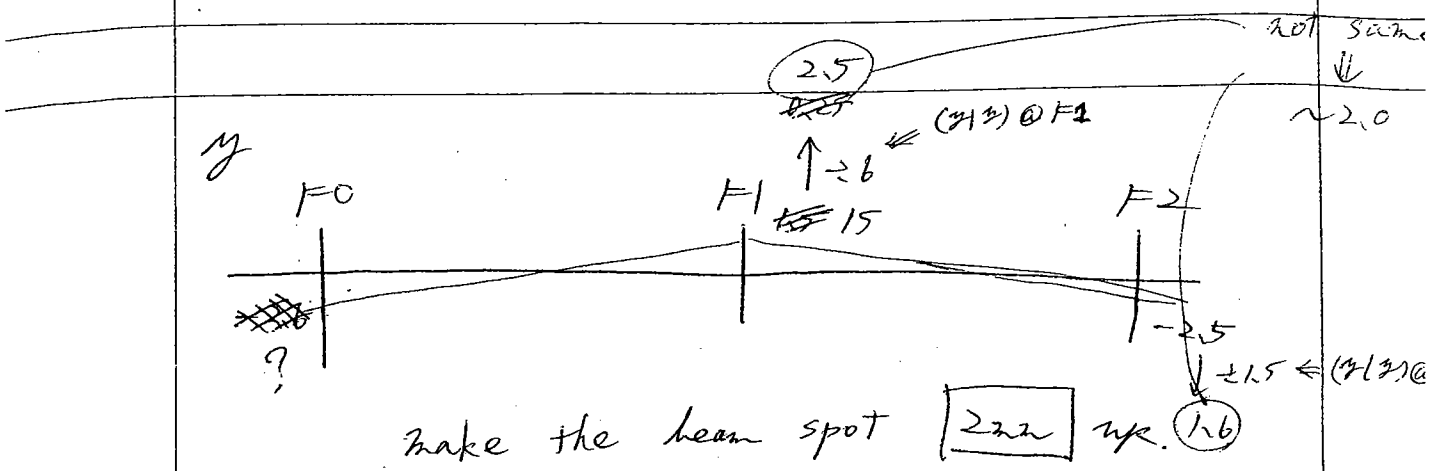
- center of y ... 14.572 ⇐ strange too large

~~Check the F2 PPAC's image~~

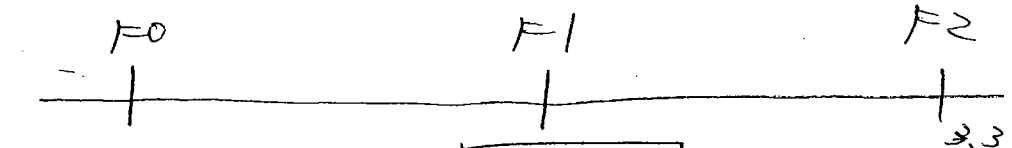
Check the F2 PPAC's image

- center of y ... −2.530 ⇐ not bad
- x 3.334

~ 300 ~ 300 cps



make the beam spot 2mm up. (1.6)



dispersive
We don't see.

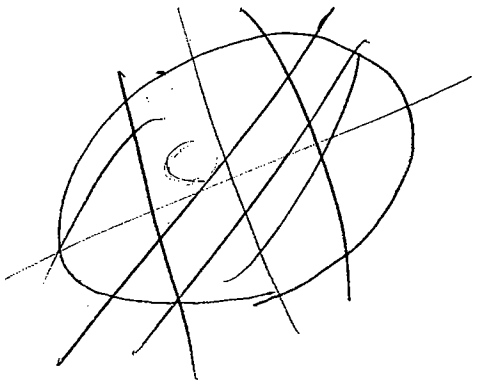
(ｱﾚｽ) = 2.5

⇓

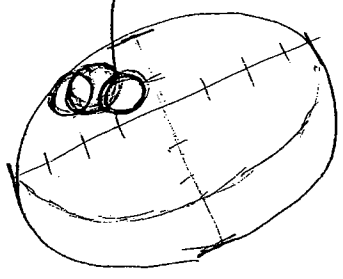
3.3 ÷ 2.5 = 1.3

let's move the beam spot 1.3mm left

F0 2m ∫ ⇒ 1m



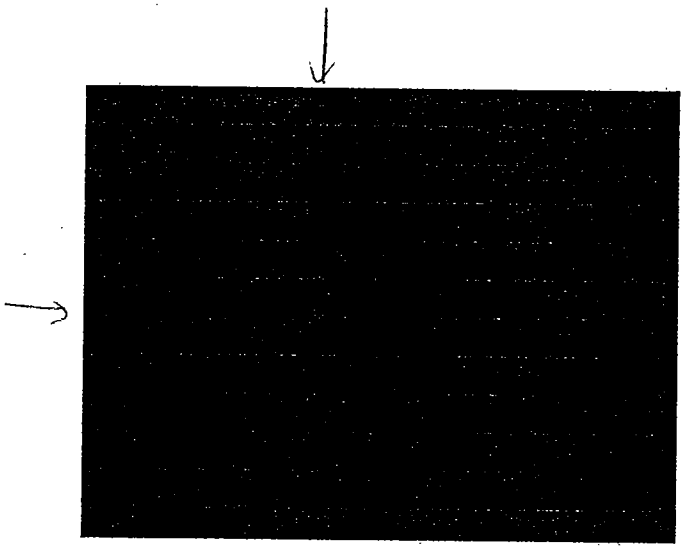
beam spot now



x : 2m
y : 3m

⇓

then move the spot red one



{ Ion Source Slit → full open
  other → full atennate

that is. (×1/3)

F2 PPAC trigger should be 300 cps

⇓

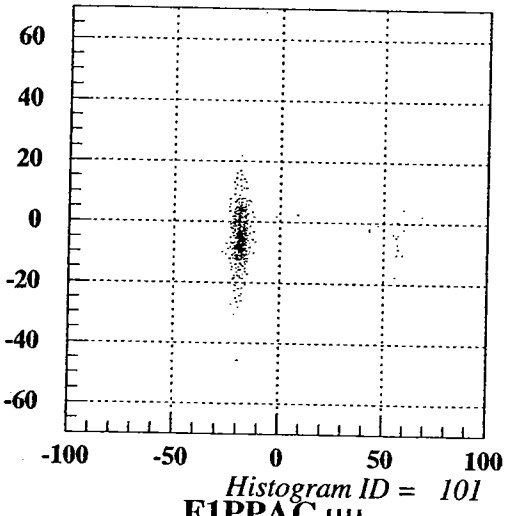
But 3000 cps
if becomes

Check the F1 PPAC

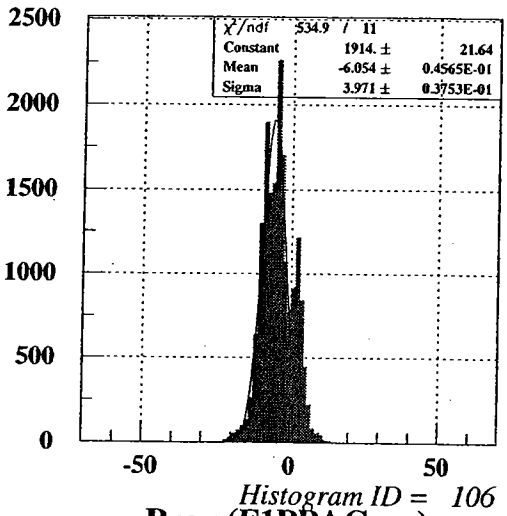
5:40 ◦ F1 PPAC center of X dispersive

Y −6.054 ≒(-6) = +1.009

~~◦ F2 PPAC~~



F1PPAC μμ



Proy.(F1PPAC μμ)

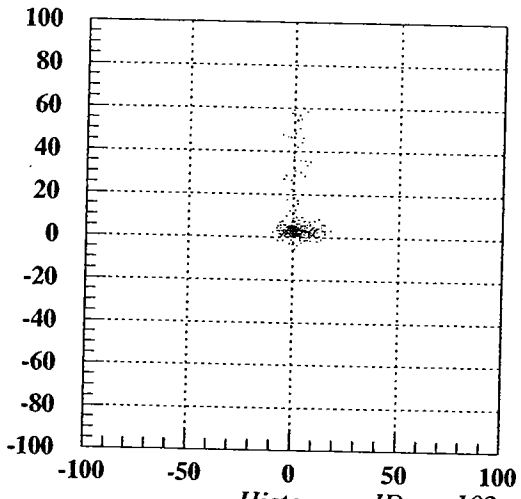
◦ F2 PPAC center of X 0.8570 ≒ 2.5 = 0.34

Y 2.920 ≒ 1.5 = 2

calculate

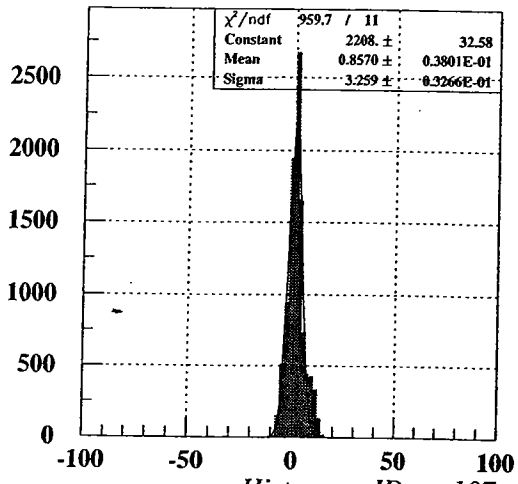
$x \Rightarrow -0.34\,mm$ $0.34\,mm$ right

$y \Rightarrow \frac{(1+2)}{2} = 1.5\,mm$ $1.5\,mm$ down



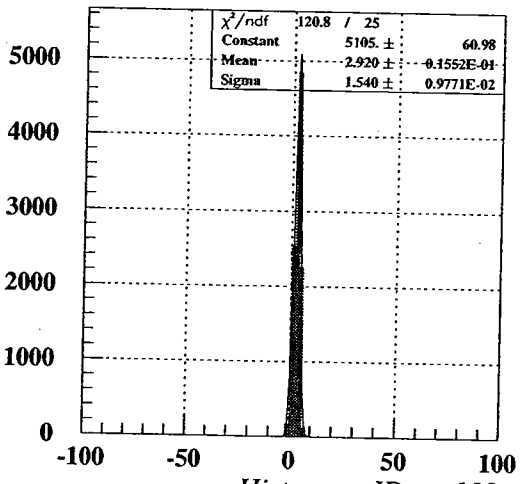
Histogram ID = 102

F2PPAC μμ



Histogram ID = 107

Prox.(F2PPAC μμ)



Histogram ID = 108

Proy.(F2PPAC μμ)

F2

PPAC

let's move x 0,34 mm Right

y 1,5 mm down

now 41k cps

F1 center of X dispersive

T 0.8128 ÷ (−5.7) = −0.1425

F2 center of X 1.33 ÷ (2.5) = 0.532

T 1.48 ÷ (1.5) = 0.98

⇑

less than 1mm

good enough!

55 Let's check F3 PPAC

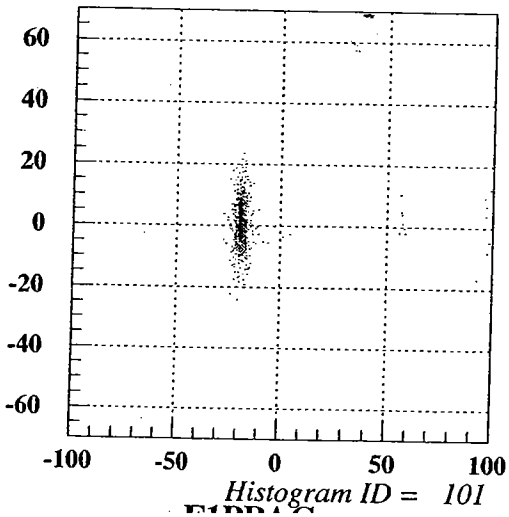
F3 a center of X 0.2212

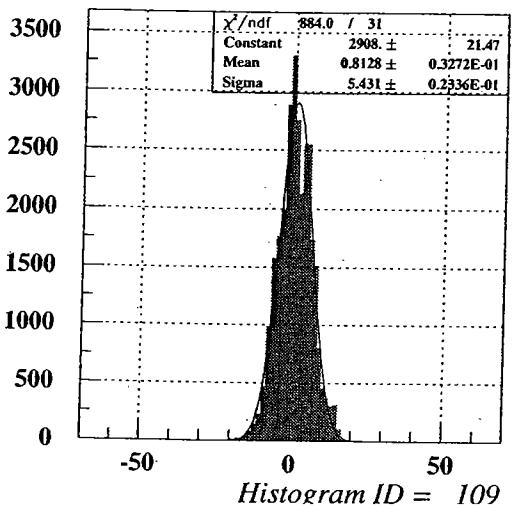
T 1.403

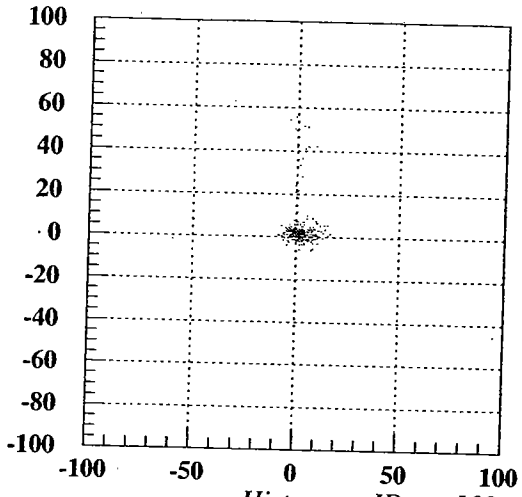
b X −1.199

T −0.7824

F1 PPAC

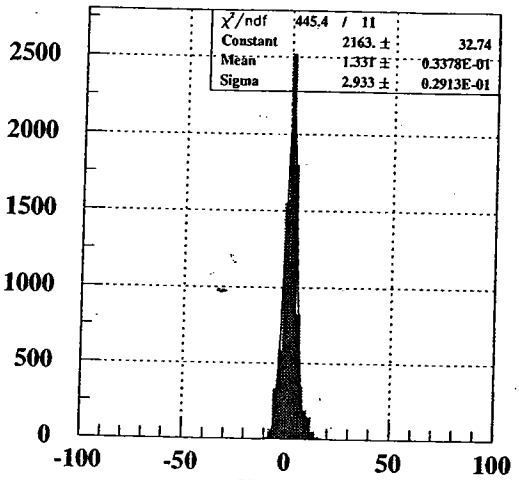






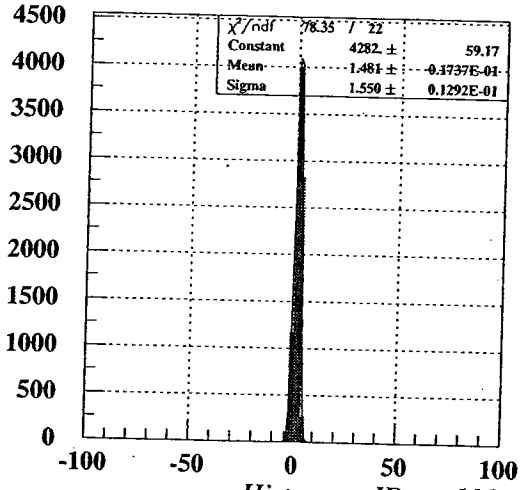
Histogram ID = 102

F2PPAC μμ



Histogram ID = 111

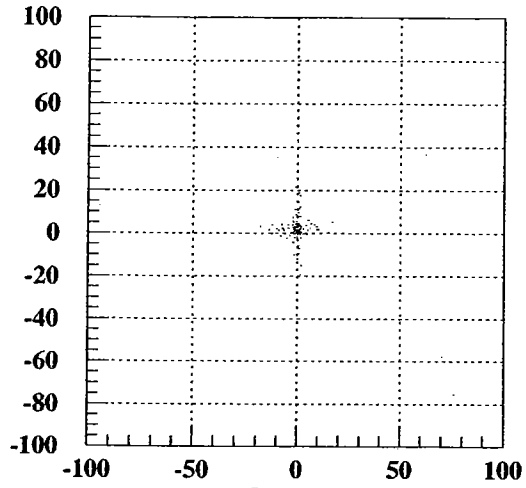
Prox.(F2PPAC μμ)



Histogram ID = 110

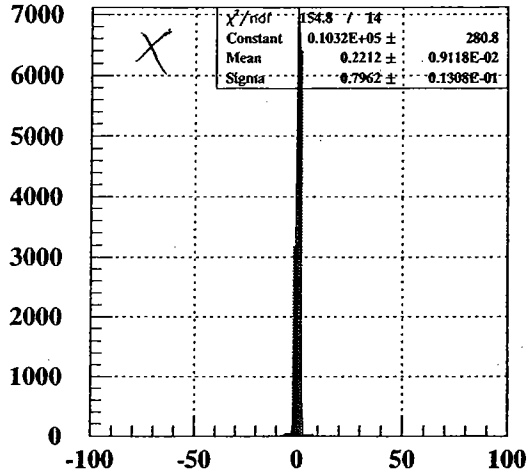
Proy.(F2PPAC μμ)

F2
PPAC



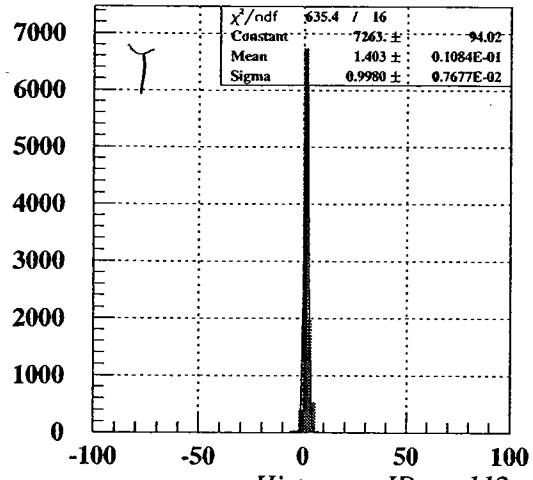
Histogram ID = 103

F3aPPAC μμ



Histogram ID = 113

Prox.(F3aPPAC μμ)

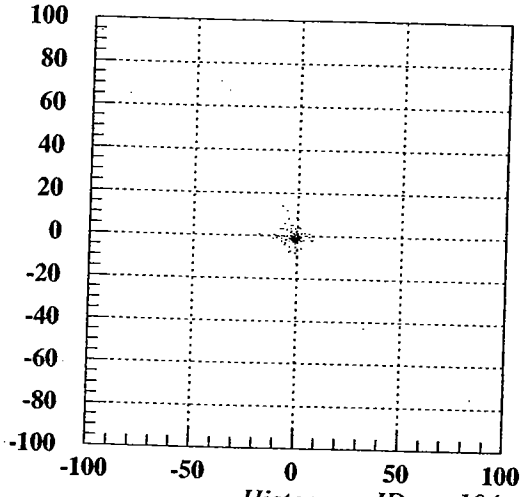


Histogram ID = 112

Proy.(F3aPPAC μμ)

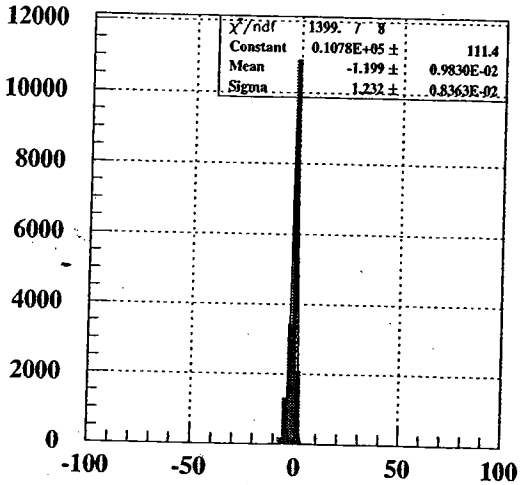
F3a

PPAX



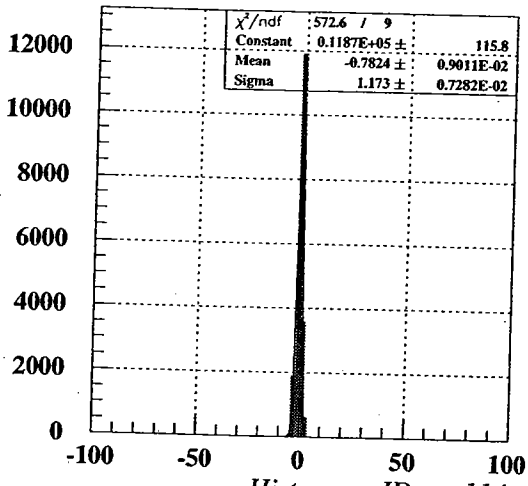
Histogram ID = 104

F3bPPAC μμ



Histogram ID = 115

Prox.(F3bPPAC μμ)

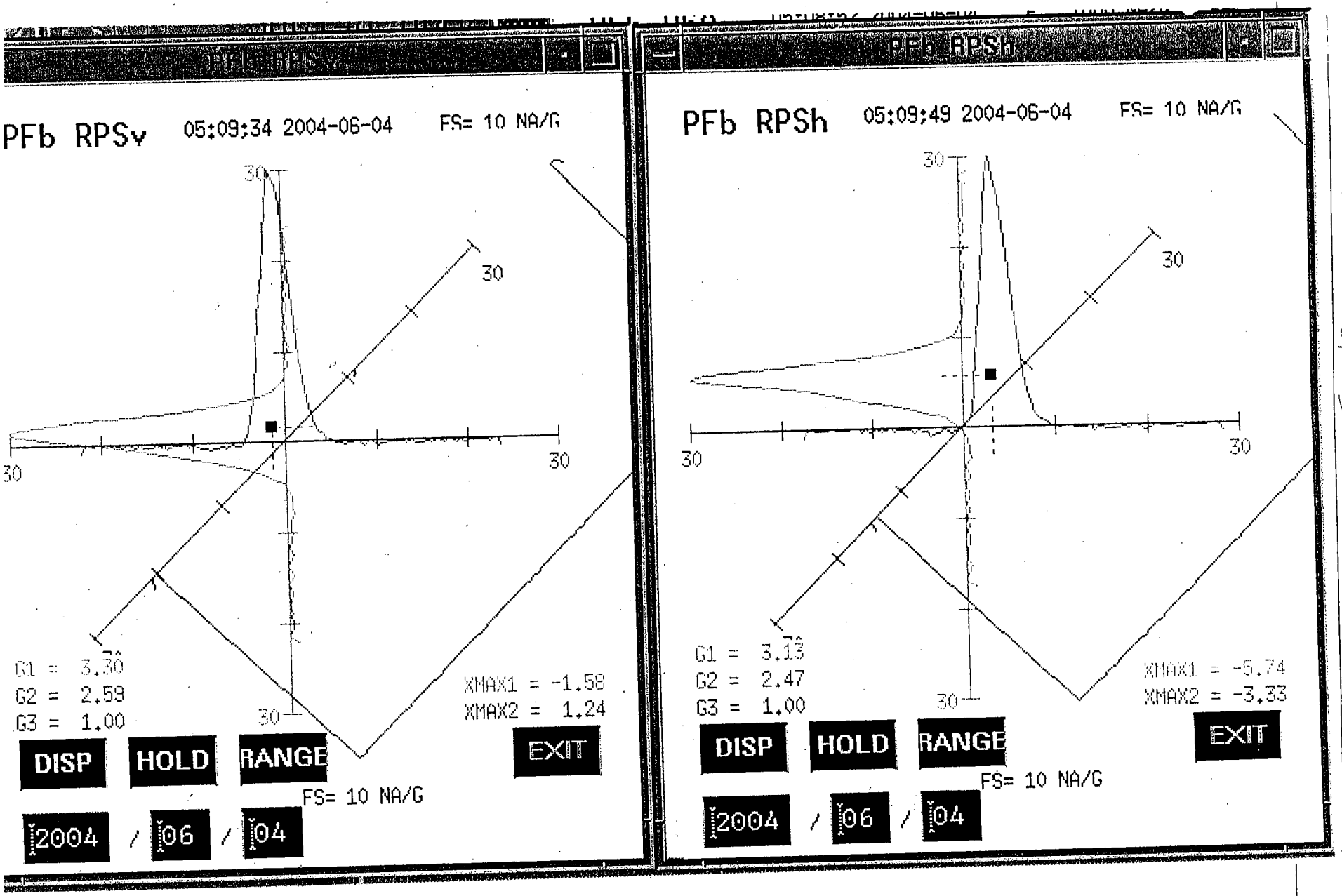


Histogram ID = 114

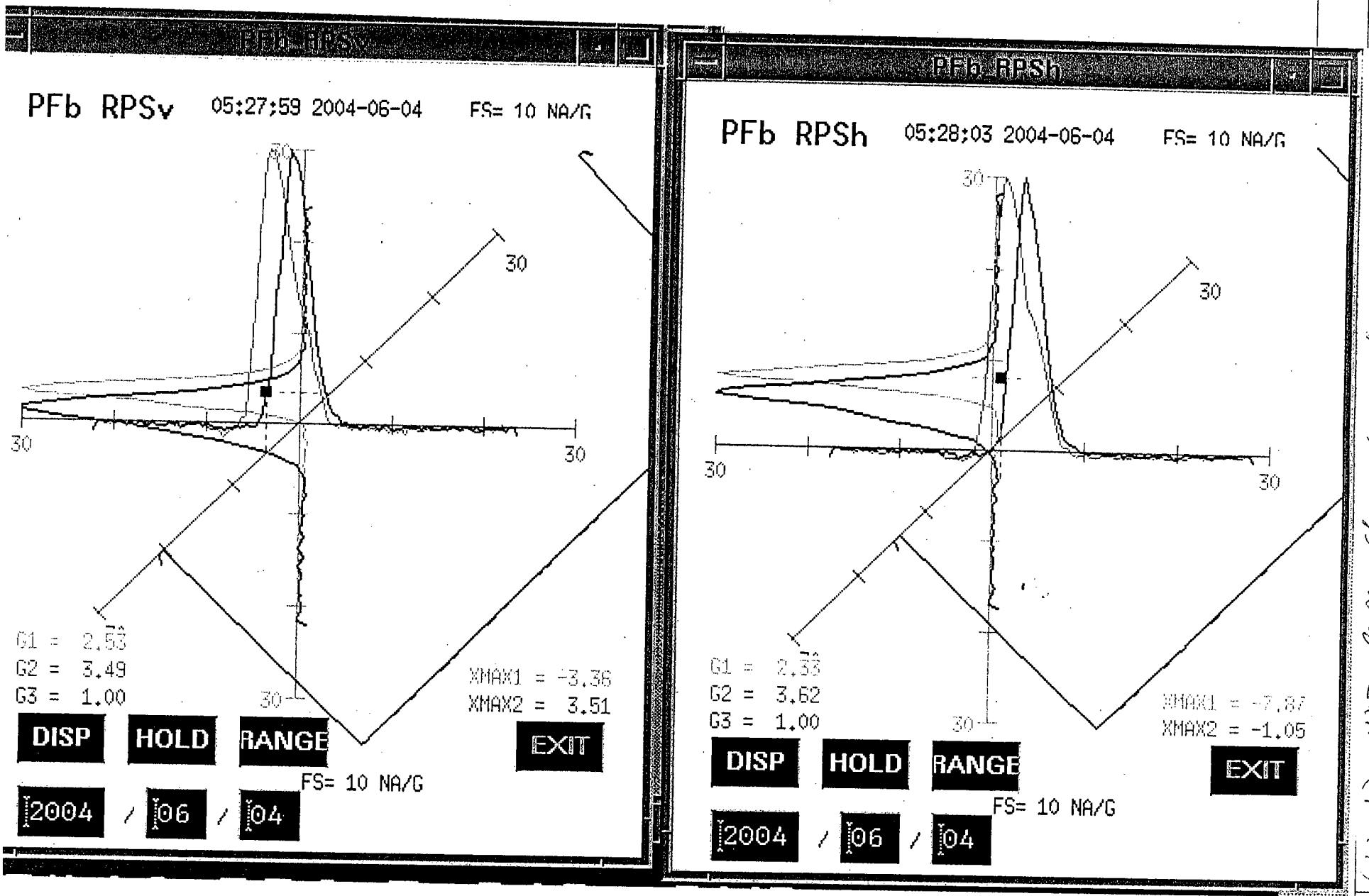
Proy.(F3bPPAC μμ)

F3b

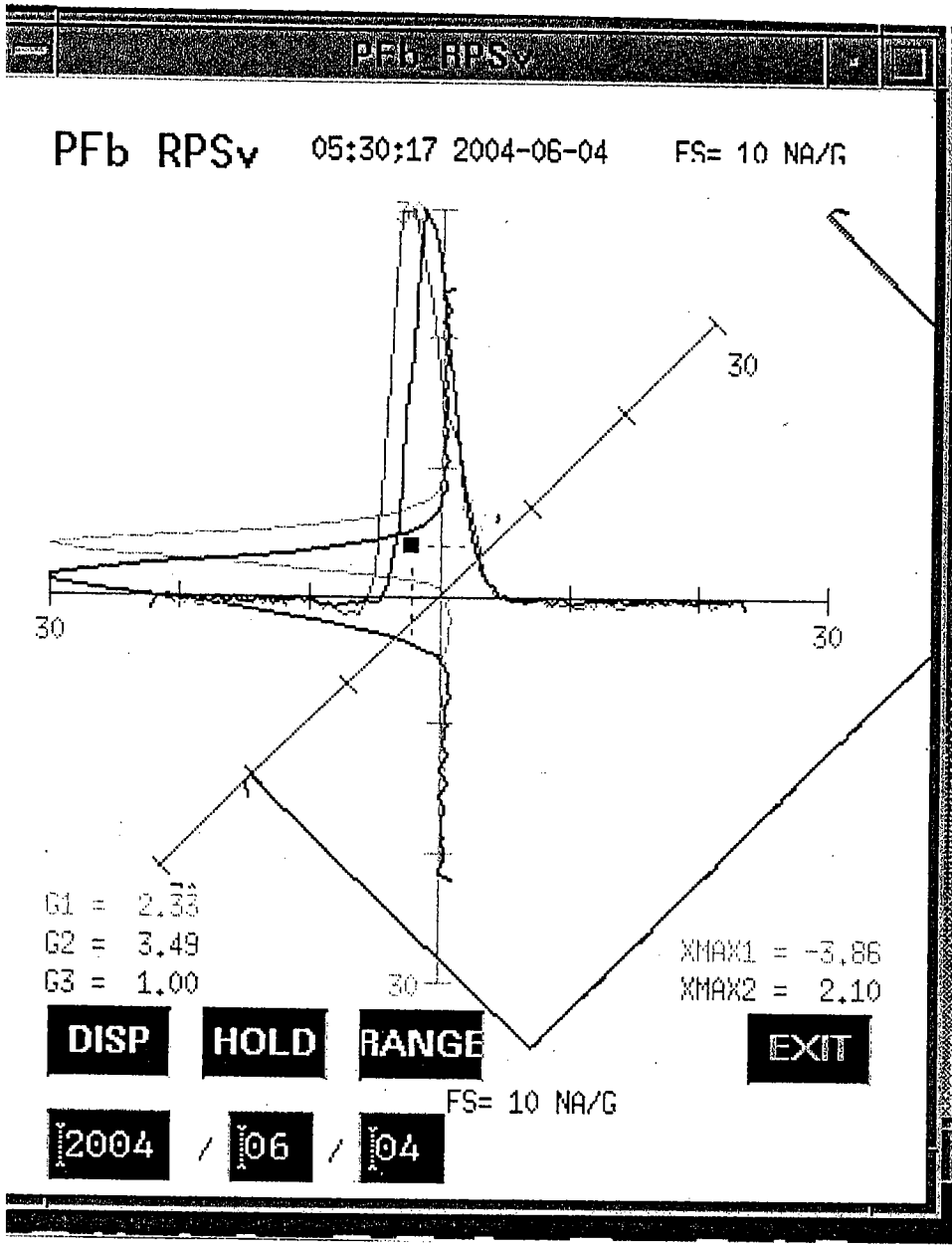
PPAC

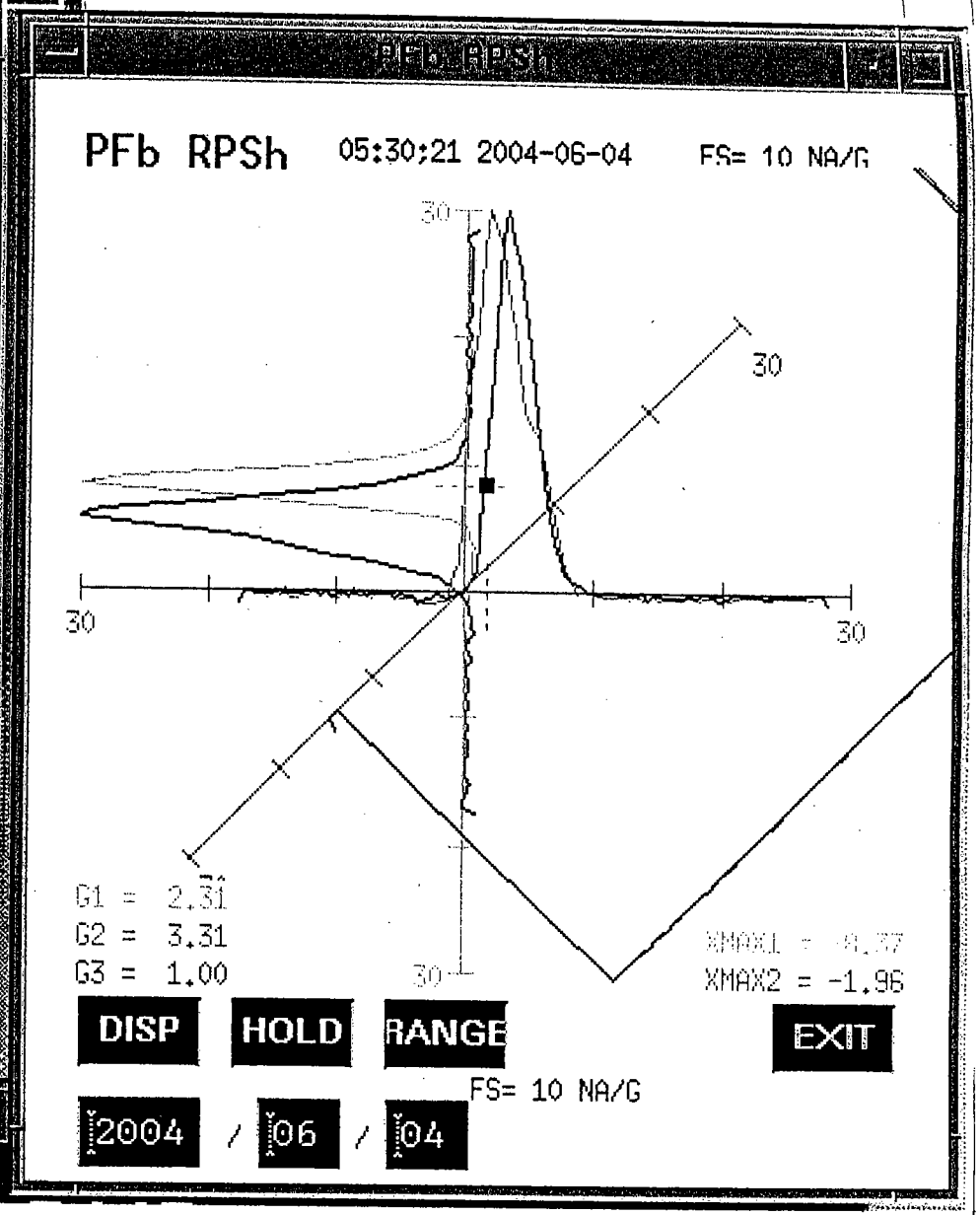


& First state (P13)

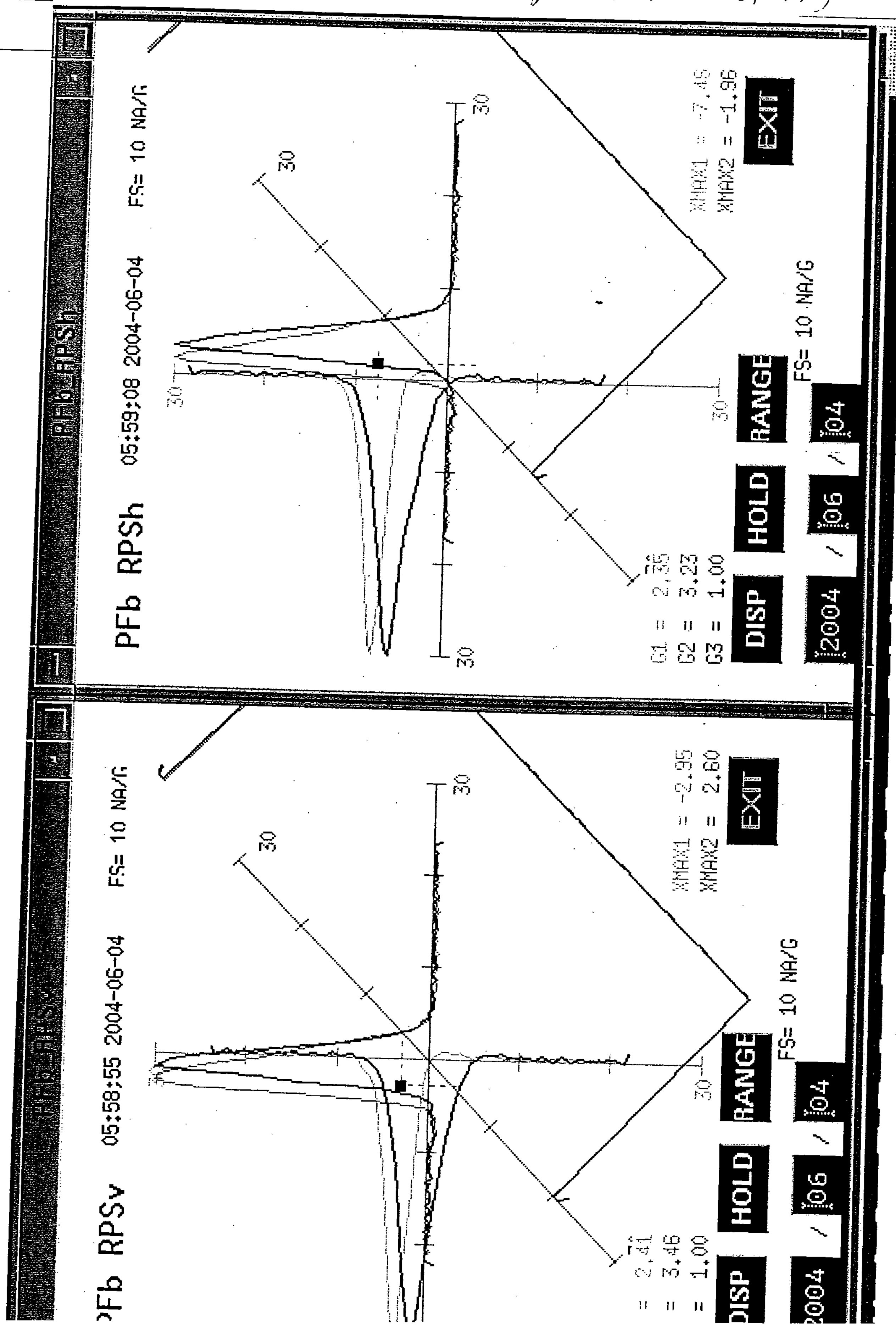


14 Then change the settings with R and L (P 14)


PFb RPSv
PFb RPSv 05:30:17 2004-06-04 FS= 10 NA/G
30
30
30
30
G1 = 2.33
G2 = 3.49
G3 = 1.00
XMAX1 = -3.86
XMAX2 = 2.10
DISP
HOLD
RANGE
EXIT
FS= 10 NA/G
2004 / 06 / 04

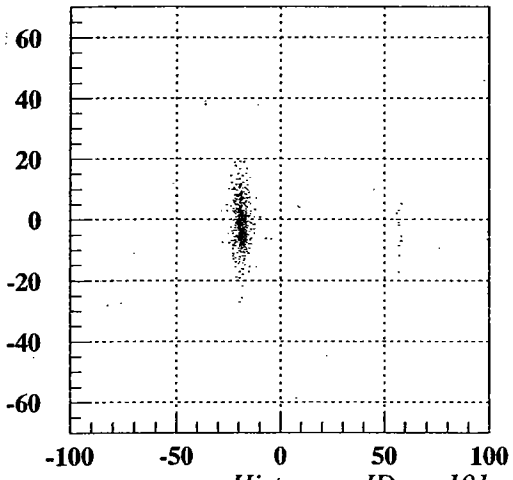

PFb RPSh
PFb RPSh 05:30:21 2004-06-04 FS= 10 NA/G
30
30
30
30
G1 = 2.31
G2 = 3.31
G3 = 1.00
XMAX2 = -1.96
DISP
HOLD
RANGE
EXIT
FS= 10 NA/G
2004 / 06 / 04

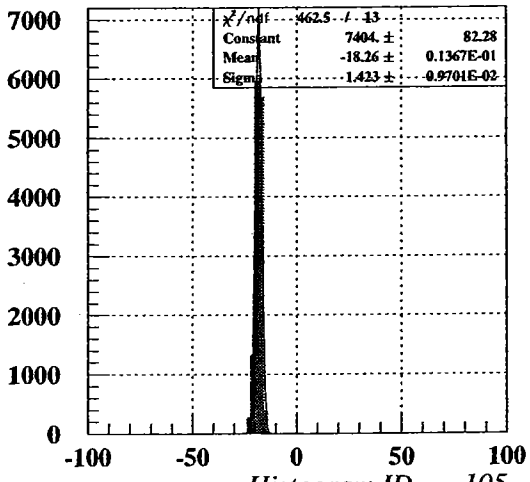
☆ Recharge the setting values (P17)



05 F2 PPAC ⊗ center of X −18.26

Want to this value 0
by change the BP (D1)





$\frac{-18.26\text{mm}}{72\text{ mm}} \times 3\% = 0.76\%$ increase.

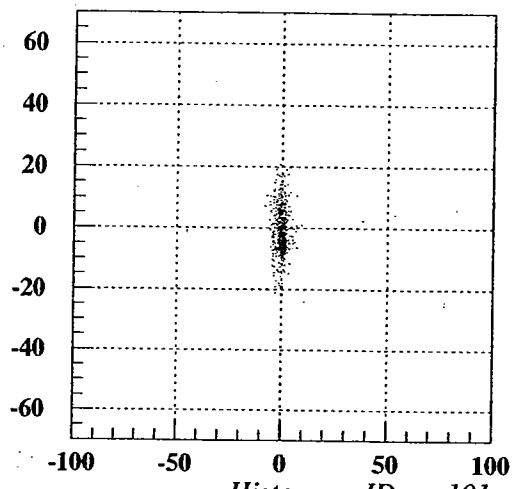
D1 923.830 mT

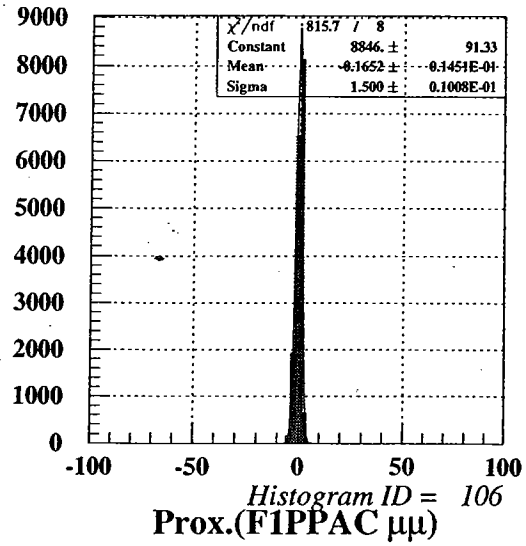
D2 924.660 mT

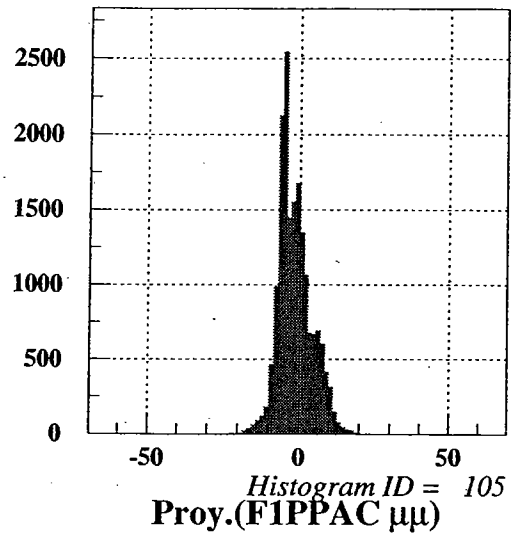
⇓

D1 931.042 mT

⇒ (^{86}Kr (30+) 63.770AMeV)





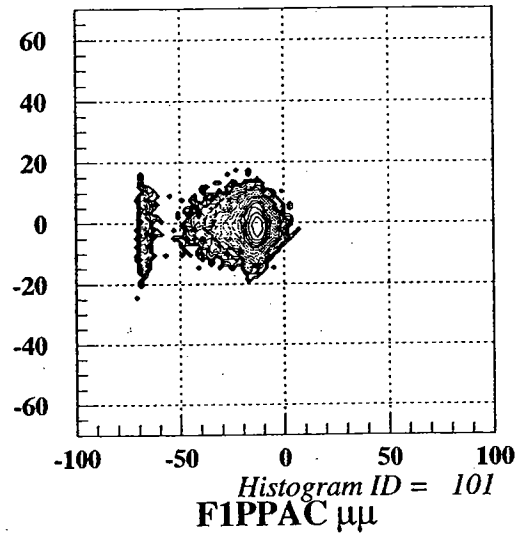


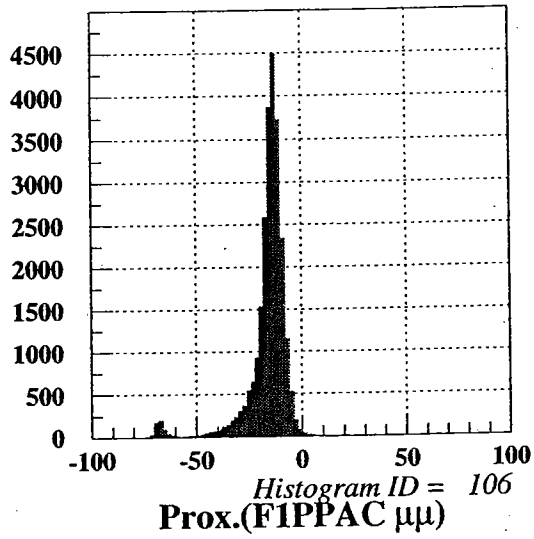
Ta 0.1mm 51.068AMeV (2.491 Tm) 694.
(by ENEW)

first set this value ~~(D1)~~
(D1, D2, TQ)

closed the F2 down stream gate valve.

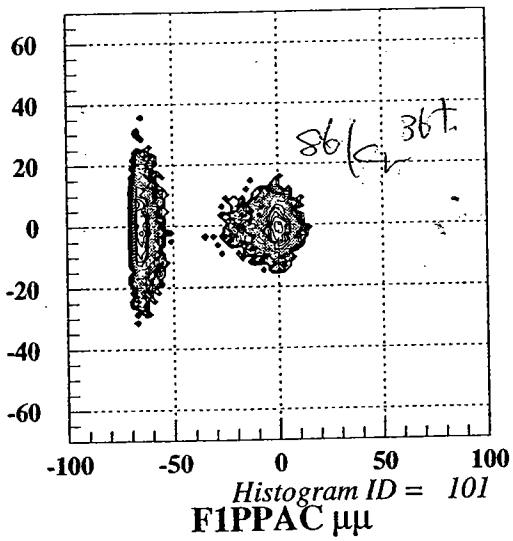
F2 F.C. SSD ⇒ out



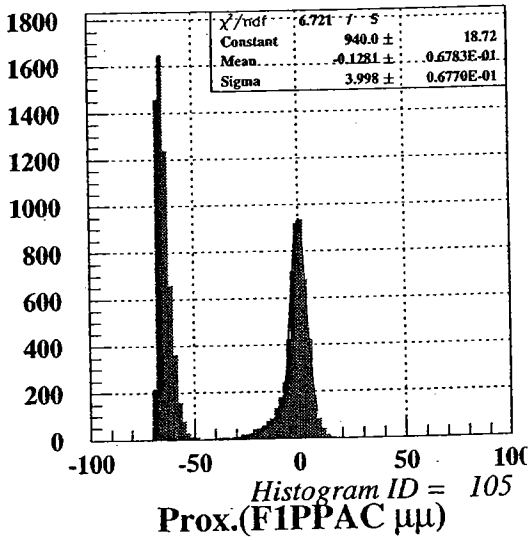


adjust the DP of range

Ta 0.1mm

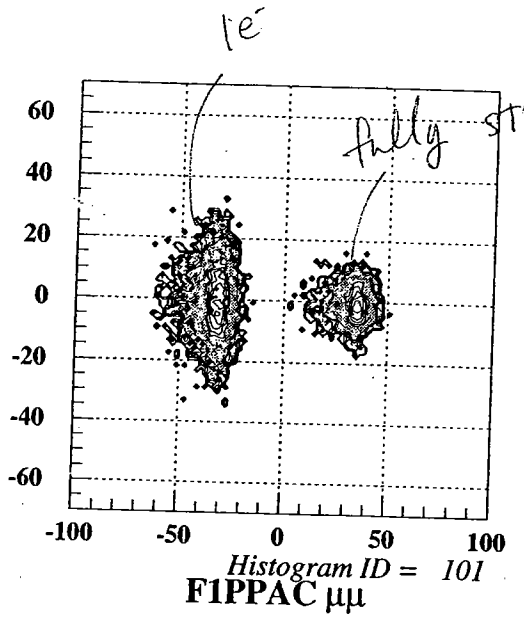


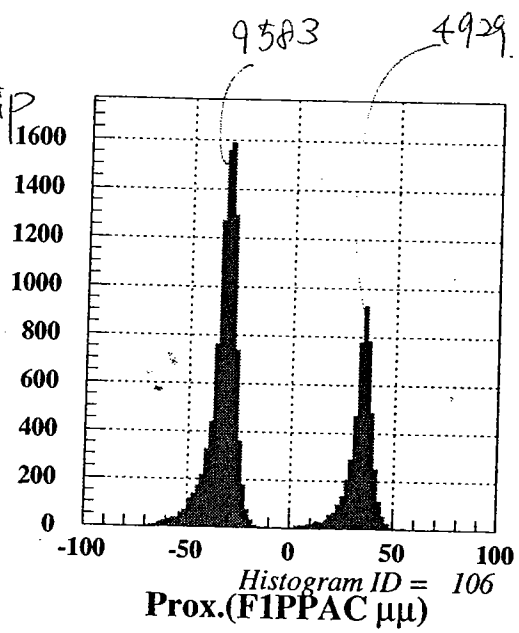
86 36



DP = 696.865 mT. (2.508 × T₂₀)

6:40 | Run 3





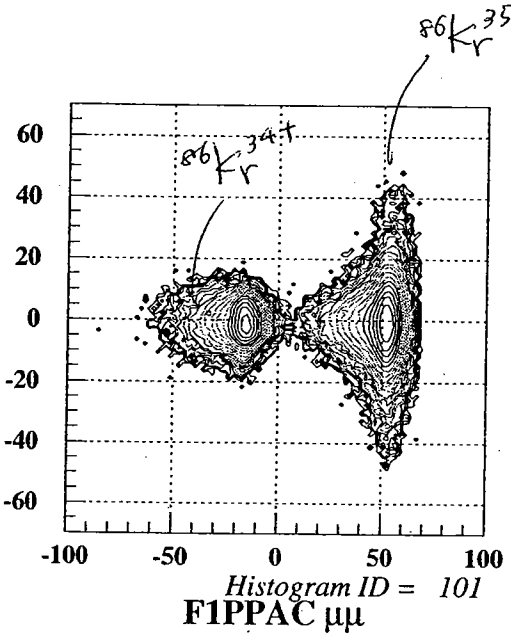
Charge state distribution

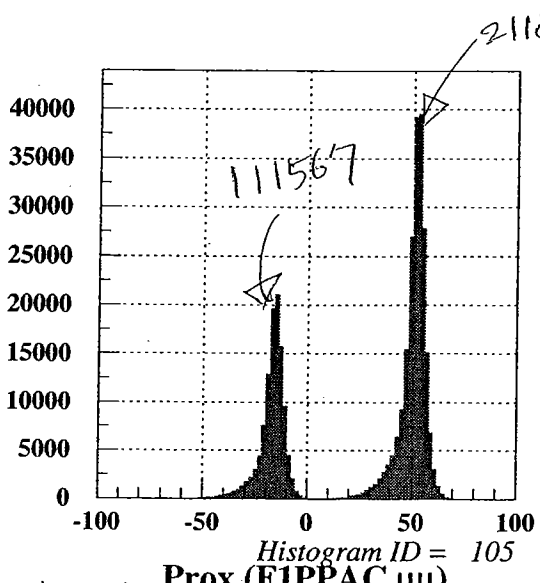
Bρ1 = 707.243 mT × 3.6 = Bρ1 = 2.546 mT·m

Target = 0.1 mm t Ta

$^{86}Kr^{36+}$ / $^{86}Kr^{35+}$ = 4929 / 9583

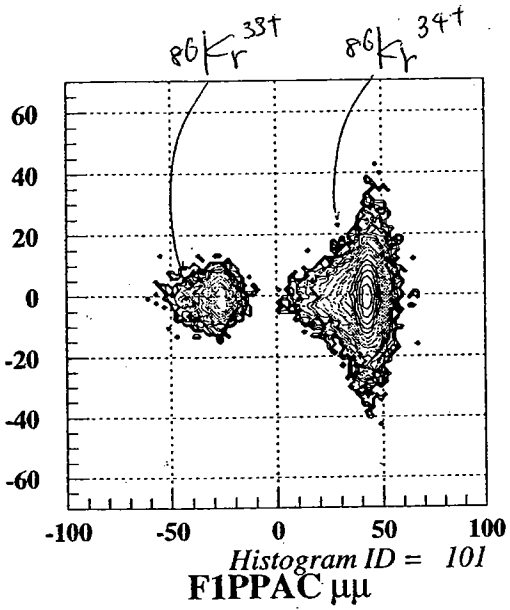
Run 4



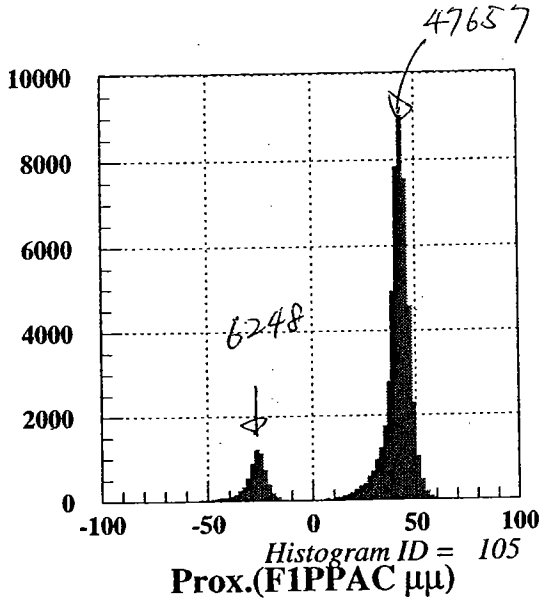


Bρ1 = 7.35 [illegible] T

run5. D1 = 751.637 mT (Bρ1 = 2.7059 T.m)

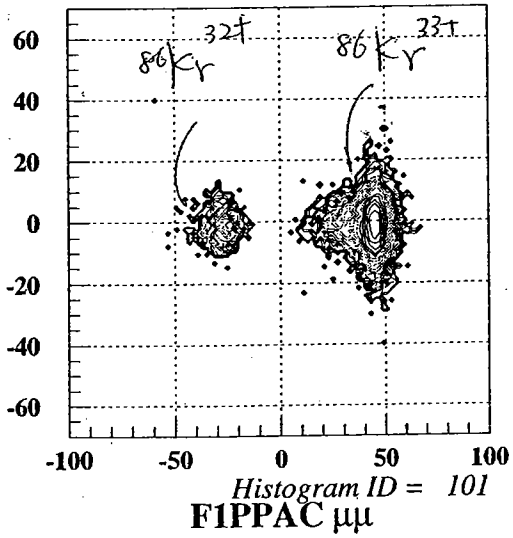


F1PPAC μμ

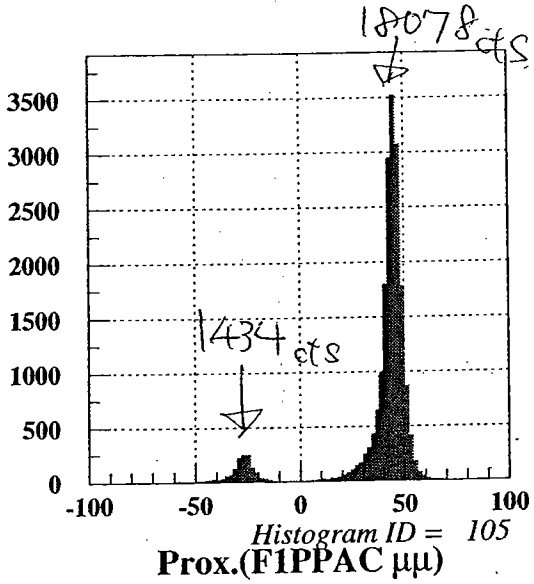


Prox.(F1PPAC μμ)

run6. D1 = 775.103 mT
(Bρb1 = 2.7903 T.m)

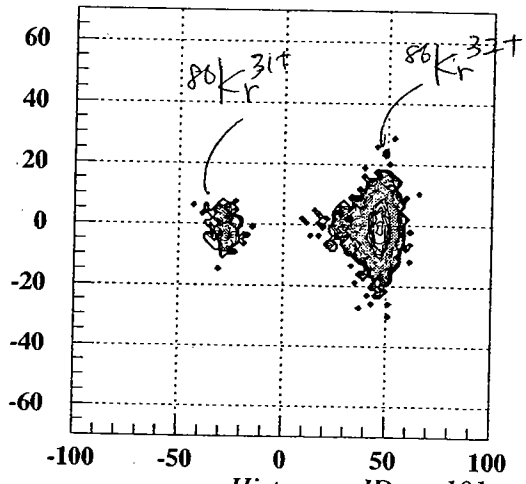


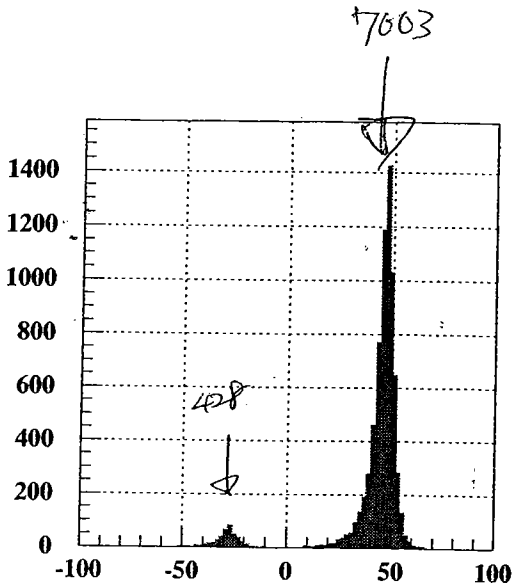
F1PPAC μμ



Prox.(F1PPAC μμ)

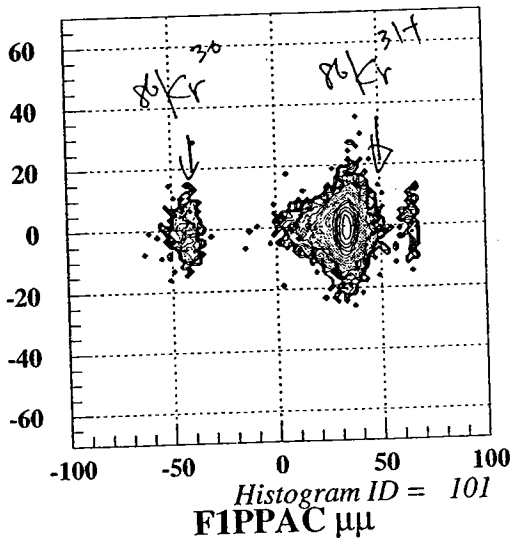
nm7 800.106 mT

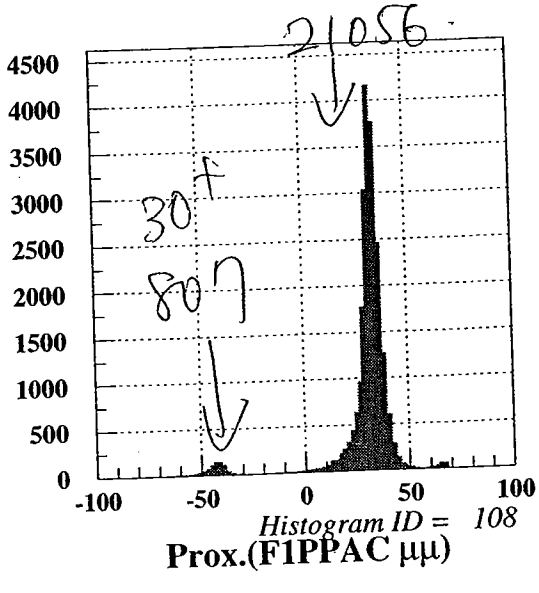




nm8 821.034 mT

att. 1/100 ~~filter~~ removed





```
------------------------------------------------------------------------------
GLOBAL: Q-states of heavy ions behind matter layers                Version 02/97
------------------------------------------------------------------------------

(Z=36, A= 86., Qe= 6) at E =  63.0 MeV/u on (Z=73, A=181.0, D=0.17E+03 mg/cm^2)

Q-states at target exit:

D(mg/cm^2)   D_eq    Eout      Q(0 )     Q(1 )     Q(2 )     Q(3 )     Q(4 )
                               Q(5 )     Q(6 )     Q(7 )     Q(8 )     Q(9 )

<I>: Target step size 0.1E-03 too large!  Restart of calculations!

<I>: Target step size 0.1E-04 too large!  Restart of calculations!

 166.400      1.3     50.3   0.16192   0.42501   0.37436   0.03116   0.00650
                             0.00096   0.00008   0.00001   0.00000   0.00000
```

Target thickness measurement of ^{9}Be (0.625 mm^{t})

during run 9. I changed BP1 setting..

Sorry... Nobu.

BP1 = 669.444 mT

= 2.4699 T·m

GLOBAL: Q-states of heavy ions behind matter layers Version 02/97

(Z=36, A= 86., Qe= 6) at E = 63.0 MeV/u on (Z=73, A=181.0, D=0.15E+03 mg/cm^2)

Q-states at target exit:

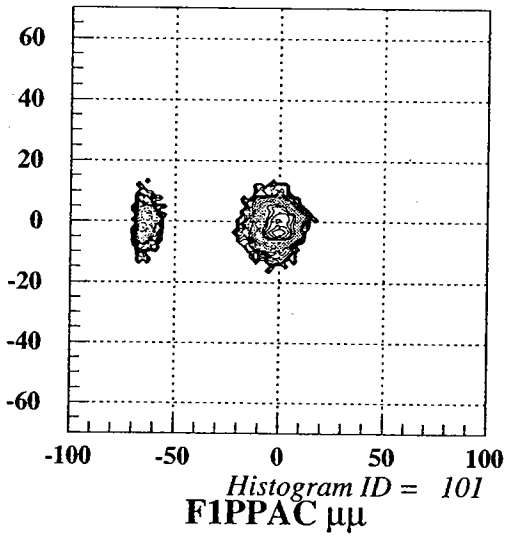
D(mg/cm^2)	D_eq	Eout	Q(0)	Q(1)	Q(2)	Q(3)	Q(4)
			Q(5)	Q(6)	Q(7)	Q(8)	Q(9)

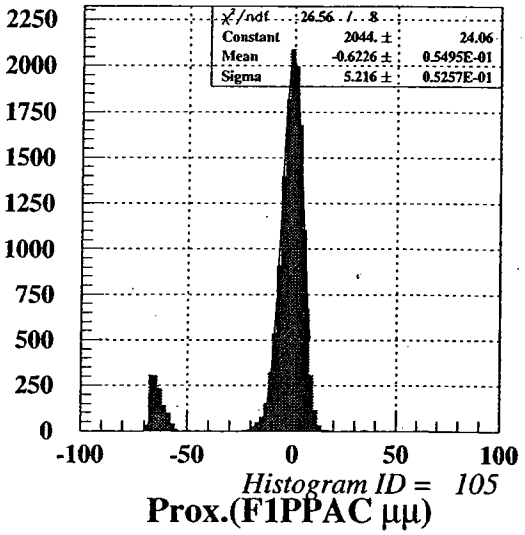
<I>: Target step size 0.1E-03 too large! Restart of calculations!

<I>: Target step size 0.1E-04 too large! Restart of calculations!

153.000	1.3	51.4	0.16993	0.43094	0.36263	0.02953	0.00603
			0.00087	0.00007	0.00001	0.00000	0.00000

Be 0,625 mm t





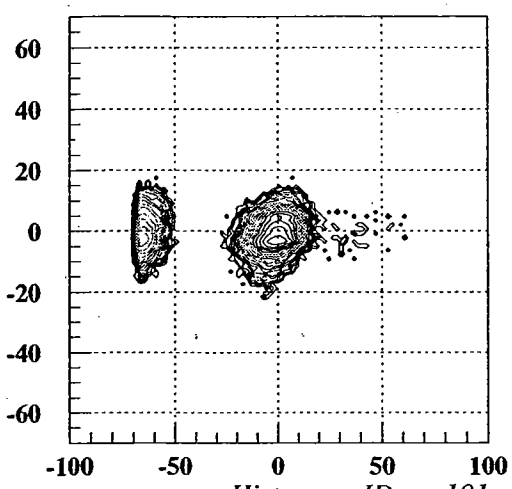
D1: 669,426 mT.

run 12

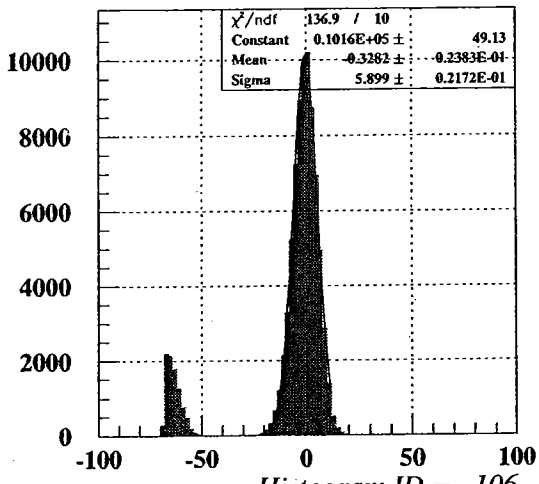
^{9}Be 1mmt

Bρ1 = 2.127 Tm

D1 = 590.917 mT



F1PPAC μμ



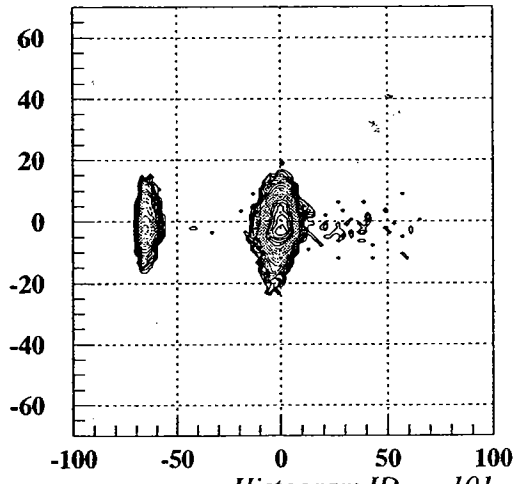
Prox.(F1PPAC μμ)

run 13 ^{9}Be 0.5mmt.

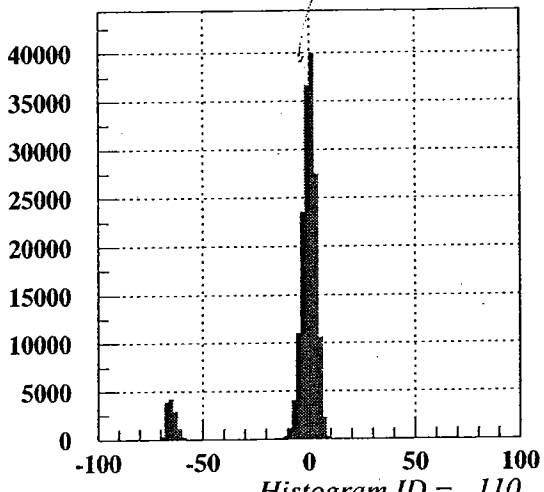
Bρ 1 = 2.498 T·m

D1 = 693.799 mT

center = -0.1786×10^{-1}



F1PPAC μμ

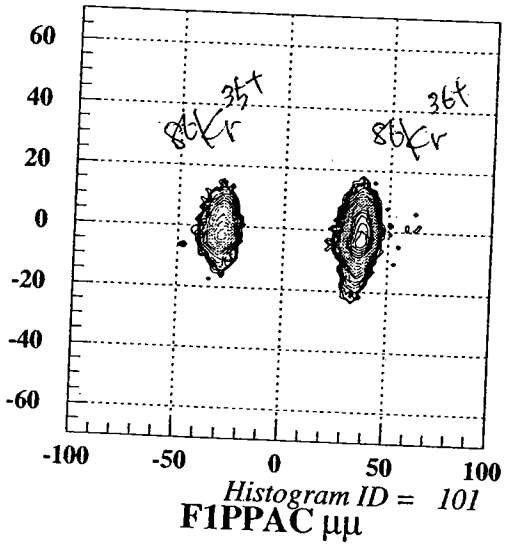


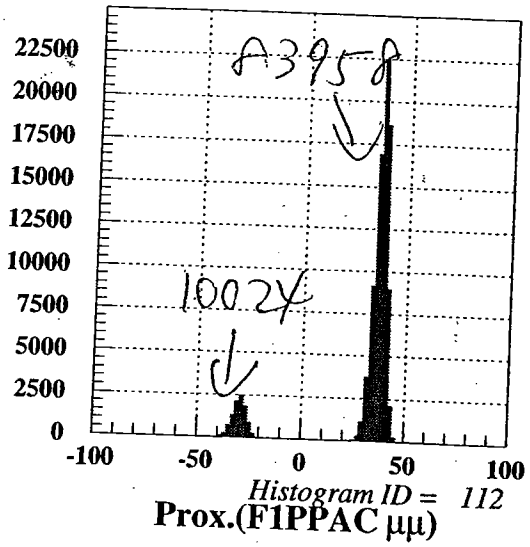
Prox.(F1PPAC μμ)

Charge distribution measurement 9Be ~~2.5 mg/cm²~~ 95 mg/cm²

run14 D1 = 704.850 mT

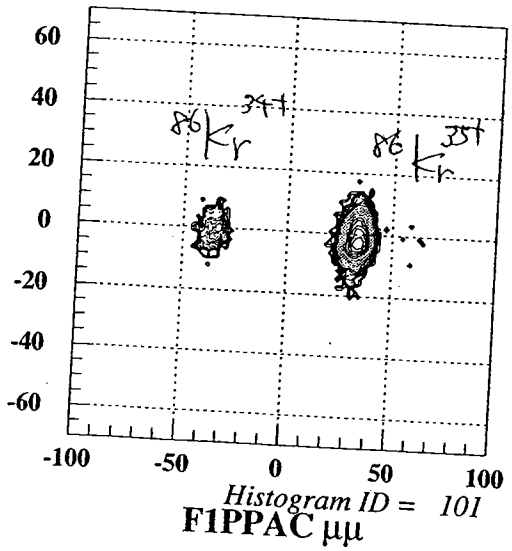
$^{86}Kr^{35+/36+}$

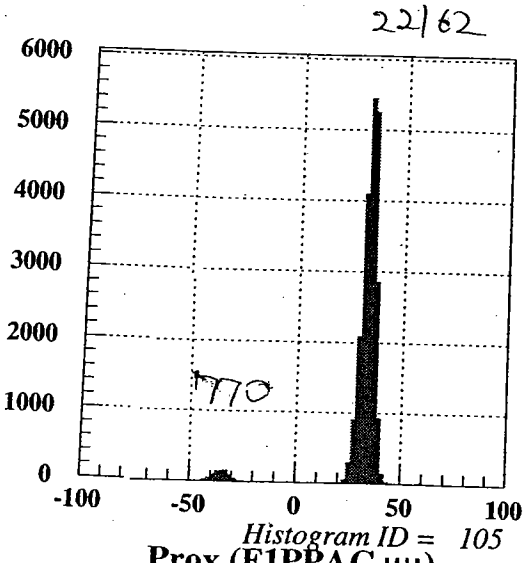




run15 D1 = 724.111 mT

$^{86}Kr^{34+/35+}$

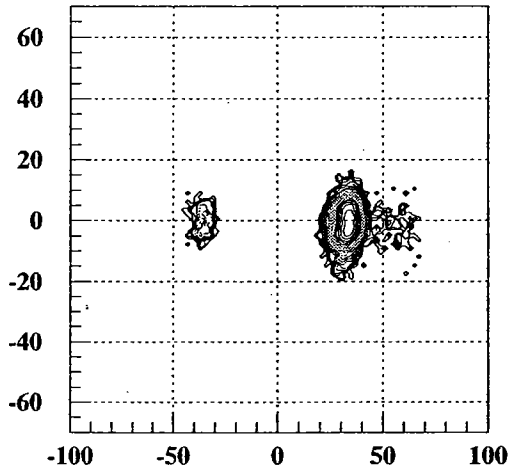




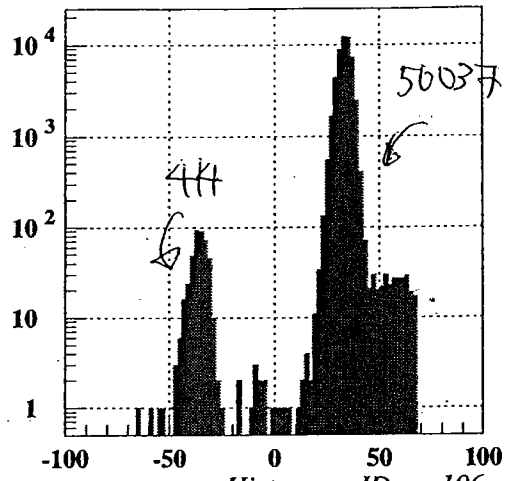
run 16 D1 = 745, 633 mT.

$^{86}Kr^{33+/34+}$

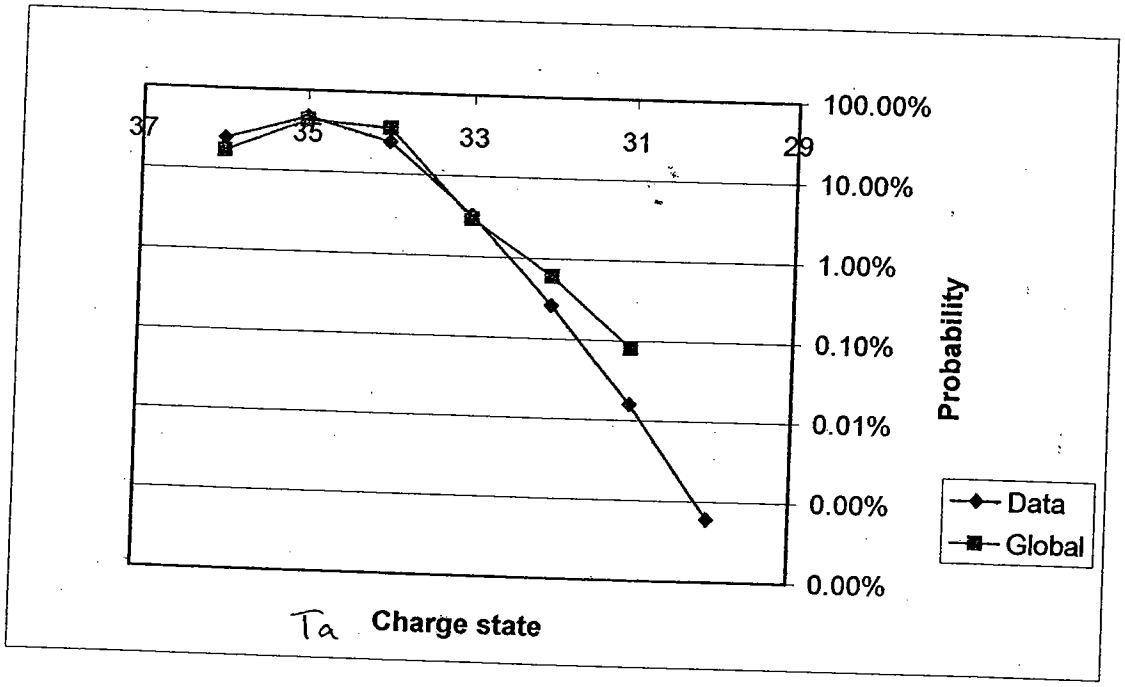
attenuater in Linac (1/100) removed.

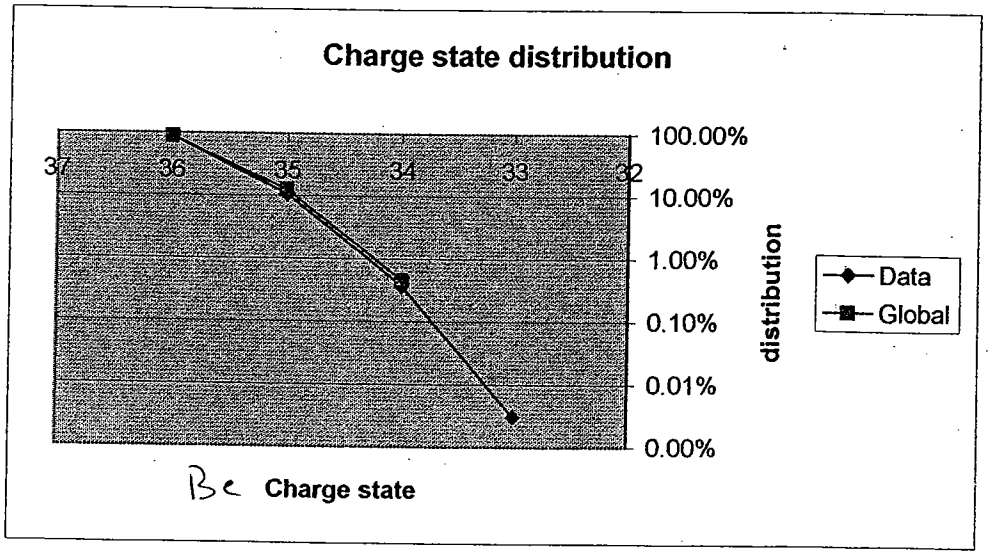


F1PPAC μμ



Prox.(F1PPAC μμ)


37
35
33
31
29
100.00%
10.00%
1.00%
0.10%
0.01%
0.00%
0.00%
Probability
Data
Global
Ta Charge state


Charge state distribution
37
36
35
34
33
32
100.00%
10.00%
1.00%
0.10%
0.01%
0.00%
distribution
Data
Global
Be Charge state

RUN 17

D1 694.053

D2 691.785. F1 PPAC Tm

r_log.adl

RIPS Control Summary

2004/06/04 10:07:43

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.685
Q2	1.5337	129.788	127.793
Q3	0.7725	123.193	123.084
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.366
SX2	0.0000	0.1469	0.000
Q4	0.5572	67.3090	67.290
Q5	0.7942	83.9196	83.988
Q6	0.6197	74.7841	75.049
SX3	0.0000	0.1469	0.000
D2	0.2777	400.244	399.799
Sx4	0.0000	0.1469	0.000
Q7	0.6468	102.7851	104.007
Q8	1.1259	107.195	107.413
Q9	1.0222	125.711	125.951
Q10	1.1110	144.406	146.161
Q11	1.4205	158.405	156.390
Q12	1.1106	144.354	144.937

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.4876 Tm F2-F3 2.4910 Tm

Target

Tgt 194.6 mm

FC Out

Up 24.0 mm

Dwn 24.0 mm

Rgt 24.0 mm

Lft 23.8 mm

Lgt

F2

FC Out

Rgt 50.1 mm

Lft 50.0 mm

PPAC

SSD -94.8 mm

Deg Out -4.9 deg.

Pla Out

F1

D1 119.8 mm

Id -134.9 mm

Rgt 72.0 mm

Lft 72.0 mm

Mom Out

Deg Emp

PPAC IN

Rot 0 deg.

F3

PPAC1 Out

Rgt 49.9 mm

Lft 50.0 mm

PPAC2 Out

SSD Out

Pla IN

Lgt

Update exit

Thickness Determination by MSU with 62 MeV/A 86Kr beam

Ta166 ~ 154.54 mg/cm²

Be115 ~ 122.6 mg/cm²

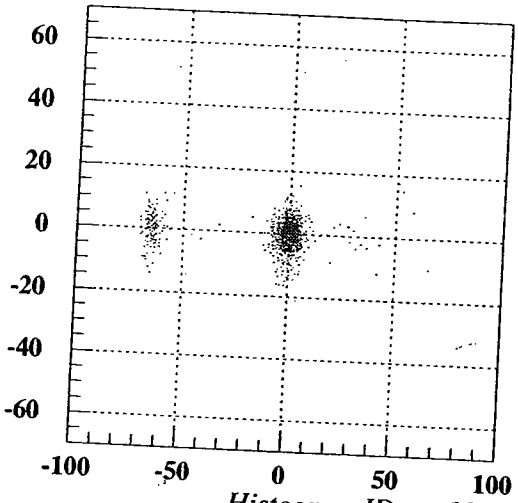
Be181 ~ 189.86 mg/cm²

Be92 ~ 97.78 mg/cm²

F1_PPAC = 2.516 mg/cm² Al

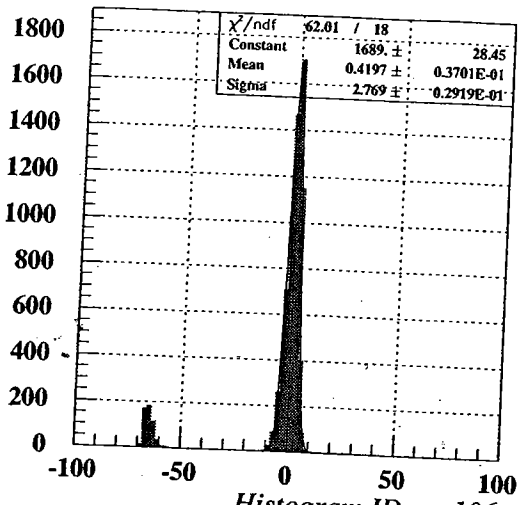
Cu mg wedge = 64.935 mg/cm²

Ni mg wedge = 119.967 mg/cm²



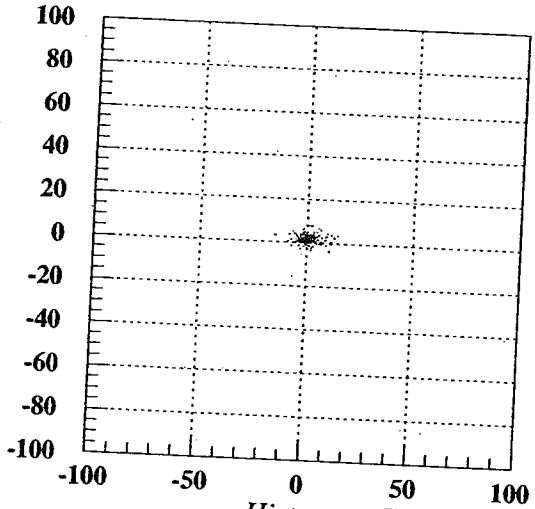
Histogram ID = 101

F1PPAC μμ



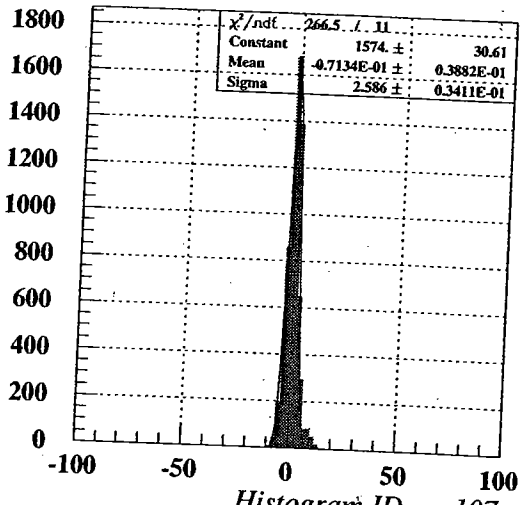
Histogram ID = 106

Prox.(F1PPAC μμ)



Histogram ID = 102

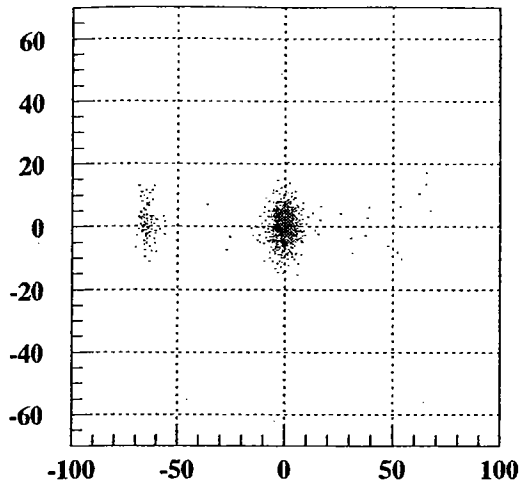
F2PPAC μμ



Histogram ID = 107

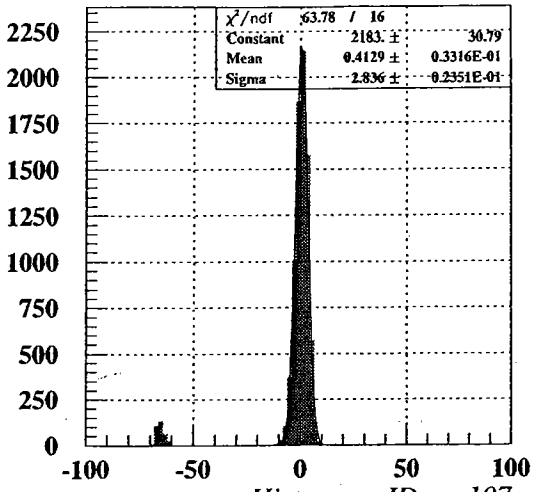
Prox.(F2PPAC μμ)

Trg F1PPAC → F2PPAC



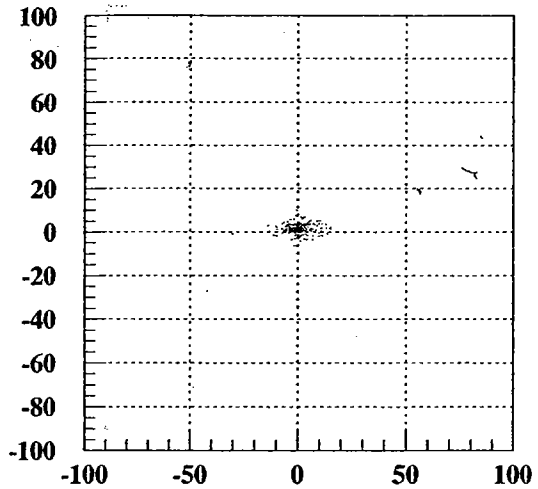
Histogram ID = 101

F1PPAC μμ



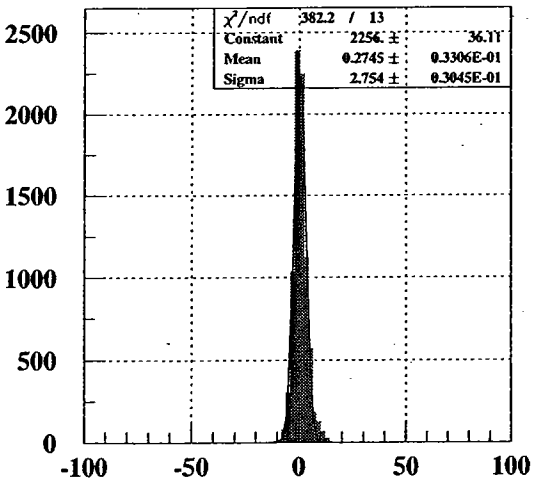
Histogram ID = 107

Prox.(F1PPAC μμ)



Histogram ID = 102

F2PPAC μμ



Histogram ID = 108

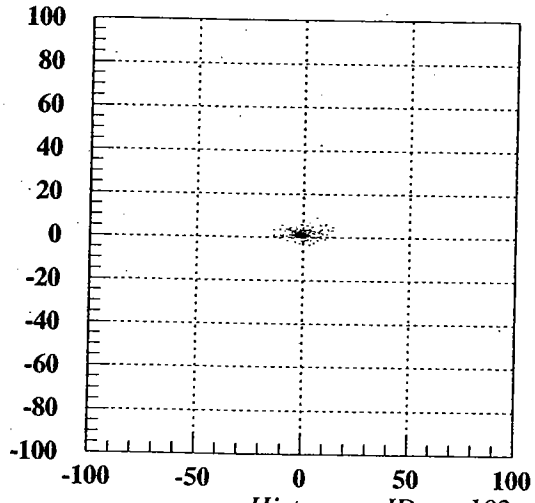
Prox.(F2PPAC μμ)

RUN 18

@ w/o F1 PPAC.

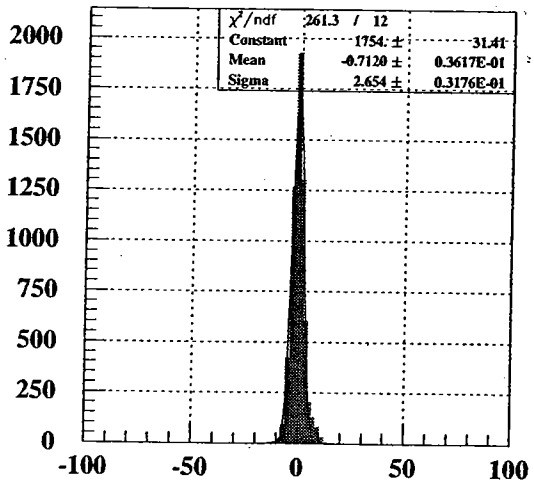
D2 = 694.3872

D1 = 694.053



Histogram ID = 102

F2PPAC μμ



Histogram ID = 106

Prox.(F2PPAC μμ)

RIPS Control Summary

2004/06/04 10:24:16

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.796
Q2	1.5337	129.788	128.267
Q3	0.7725	123.193	123.603
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.366
SX2	0.0000	0.1469	0.026
Q4	0.5572	67.3090	67.235
Q5	0.7942	84.2037	84.360
Q6	0.6197	75.0380	75.266
SX3	0.0000	0.1469	0.000
D2	0.2777	401.766	400.857
Sx4	0.0000	0.1469	0.000
Q7	0.6468	103.127	104.007
Q8	1.1259	107.551	107.808
Q9	1.0222	126.132	126.420
Q10	1.1110	144.406	146.383
Q11	1.4205	158.405	156.118
Q12	1.1106	144.354	145.048

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.4959 Tm F2-F3 2.4910 Tm

Target		F2	
Tgt	194.6 mm	FC	Out
FC	Out	Rgt	50.1 mm
Up	24.0 mm	Lft	50.0 mm
Dwn	24.0 mm	PPAC	
Rgt	24.0 mm	SSD	-94.8 mm
Lft	23.8 mm		Out
Lgt		Deg	-4.9 deg.
		Pla	Out

F1		F3	
Dl	119.8 mm	PPAC1	Out
Id	-134.9 mm	Rgt	49.9 mm
Rgt	72.0 mm	Lft	50.0 mm
Lft	72.0 mm	PPAC2	Out
Mom	Out	SSD	Out
Deg	Emp	Pla	IN
PPAC	Out	Lgt	
Rot	0 deg.		

Update

exit

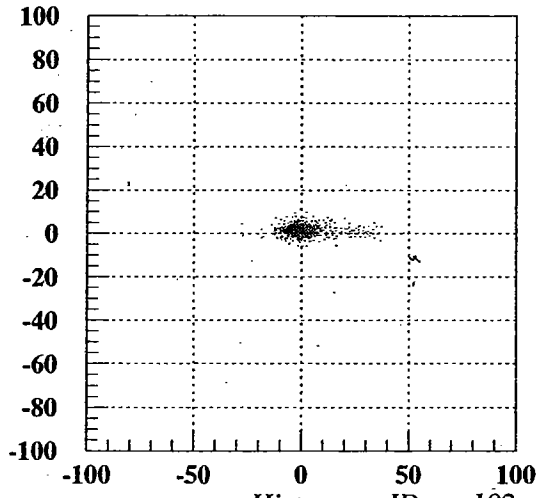
RUN19

Deg @ F1 UP (#-1 60mg/cm²) in.
(no F1 PPAC)

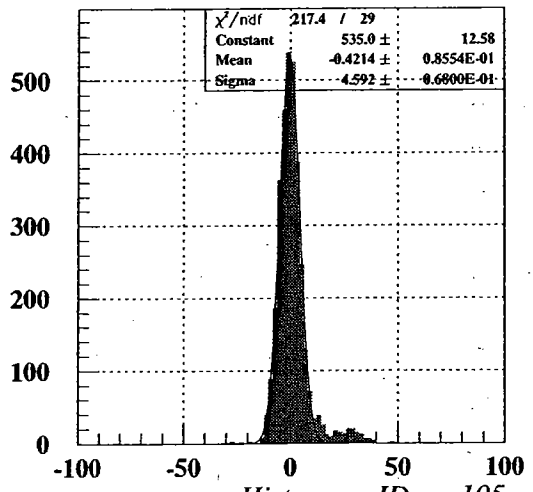
ajust D2

D1 = 694.055

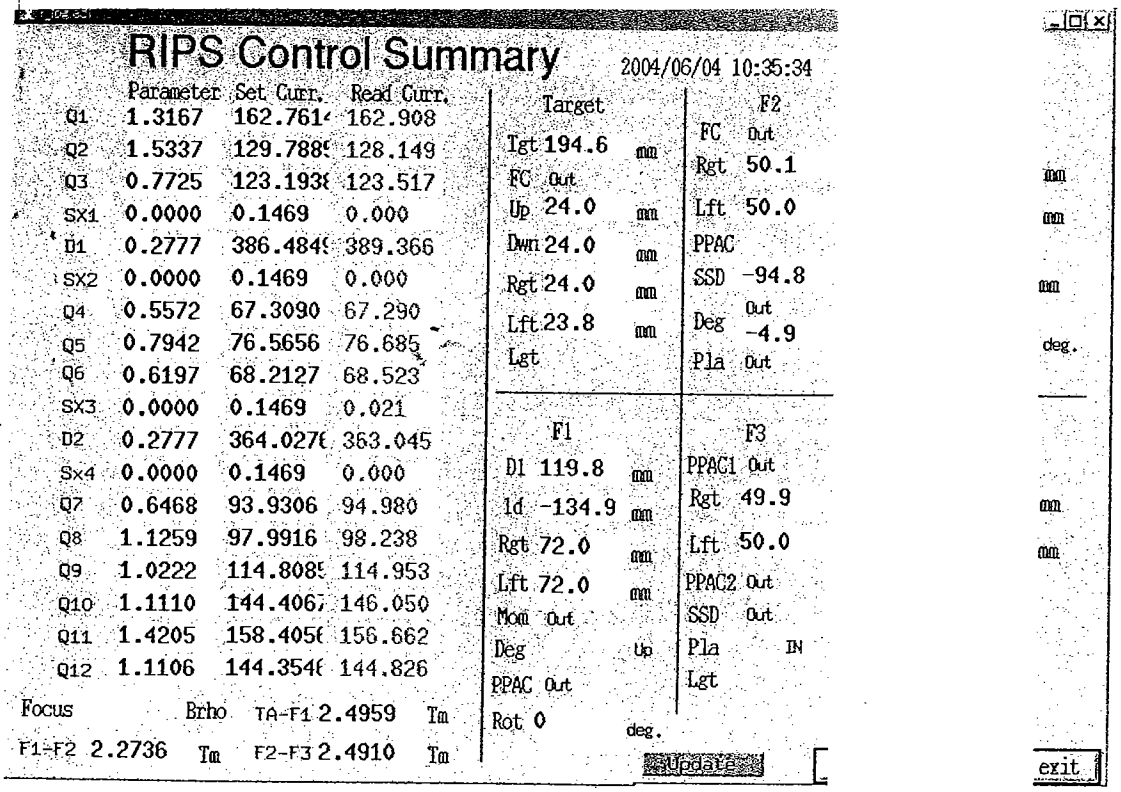
D2 = 629.626



F2PPAC μμ



Prox.(F2PPAC μμ)

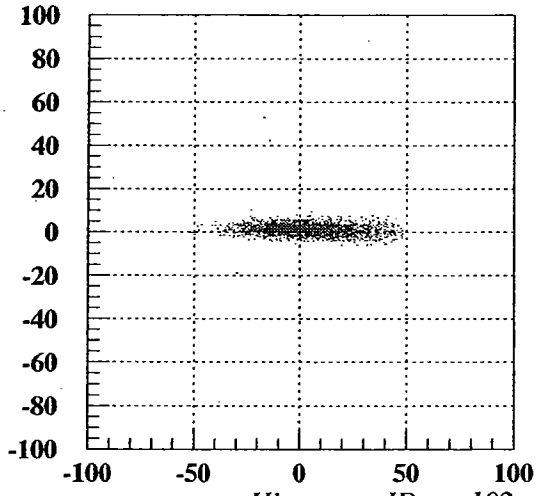


RUN 20

Deg @ F1 DOWN (116 mg/cm²) IN
(no F1 PPAC)

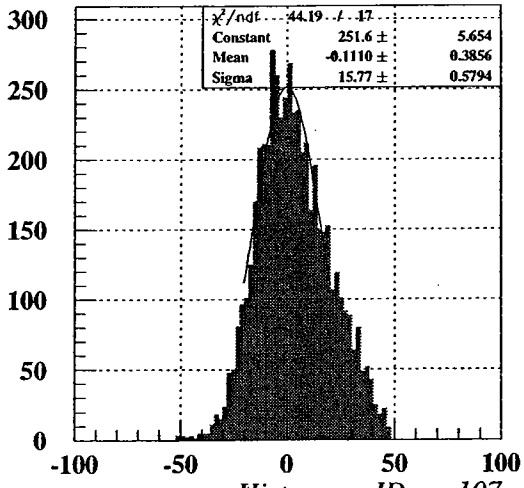
D1 694.055

D2 561.507.



Histogram ID = 102

F2PPAC μμ



Histogram ID = 107

Prox.(F2PPAC μμ)

RIPS Control Summary

2004/06/04 10:44:56

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.685
Q2	1.5337	129.788	128.267
Q3	0.7725	123.193	123.257
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.631
SX2	0.0000	0.1469	0.026
Q4	0.5572	67.3090	67.290
Q5	0.7942	67.4501	67.587
Q6	0.6197	60.0670	60.311
SX3	0.0000	0.1469	0.000
D2	0.2777	324.539	323.911
Sx4	0.0000	0.1469	0.000
Q7	0.6468	82.9550	83.270
Q8	1.1259	86.5828	86.769
Q9	1.0222	101.294	101.418
Q10	1.1110	144.406	146.272
Q11	1.4205	158.405	156.798
Q12	1.1106	144.354	144.937

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.0083 Tm F2-F3 2.4910 Tm

Target		F2	
Tgt	194.5 mm	FC	Out
FC	Out	Rgt	50.1
Up	24.0 mm	Lft	50.0
Dwn	24.0 mm	PPAC	
Rgt	24.0 mm	SSD	-94.8
Lft	23.8 mm	Deg	Out -4.9
Lgt		Pla	Out

F1		F3	
D1	119.8 mm	PPAC1	Out
Id	-134.9 mm	Rgt	49.9
Rgt	72.0 mm	Lft	50.0
Lft	72.0 mm	PPAC2	Out
Mom	Out	SSD	Out
Deg	Dwn	Pla	IN
PPAC	Out	Lgt	
Rot	0 deg.		

F1 Slit ±30mm. ← ±72mm

F1 deg OP.

Next. charge state distribution @ wedge.

Change trigger (F2PPAC → F1PPAC).

Setting for full strip, with Wedge and PPt

RIPS Control Summary

2004/06/04 11:34:38

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.685
Q2	1.5337	129.788	128.030
Q3	0.7725	123.193	122.737
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.102
SX2	0.0000	0.1469	0.000
Q4	0.5572	67.3090	67.344
Q5	0.7942	76.0365	76.128
Q6	0.6197	67.7398	68.088
SX3	0.0000	0.1469	0.000
D2	0.2777	363.488	363.045
Sx4	0.0000	0.1469	0.079
Q7	0.6468	93.2934	94.086
Q8	1.1259	97.3293	97.605
Q9	1.0222	114.024	114.201
Q10	1.1110	144.406	146.272
Q11	1.4205	158.405	156.118
Q12	1.1106	144.354	144.715

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.2582 Tm F2-F3 2.4910 Tm

Target		F2	
Tgt	194.6 mm	FC	Out
FC	Out	Rgt	50.1
Up	24.0 mm	Lft	50.0
Dwn	24.0 mm	PPAC	
Rgt	24.0 mm	SSD	-94.7
Lft	23.8 mm	Deg	Out -4.9
Lgt		Pla	Out

F1		F3	
D1	119.9 mm	PPAC1	Out
Id	-134.9 mm	Rgt	49.9
Rgt	30.0 mm	Lft	50.0
Lft	29.9 mm	PPAC2	Out
Mom	Out	SSD	Out
Deg	Up	Pla	IN
PPAC	IN	Lgt	
Rot	0 deg.		

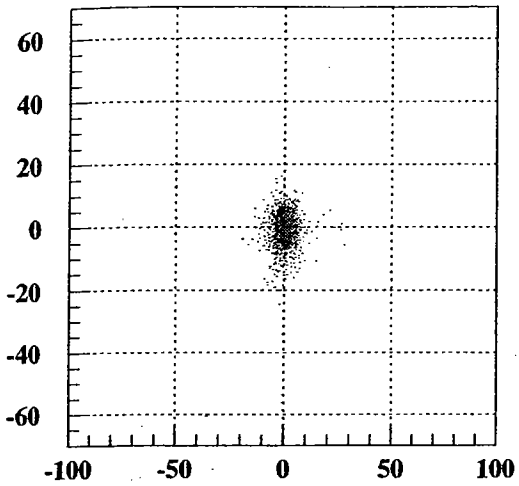
Update

exit

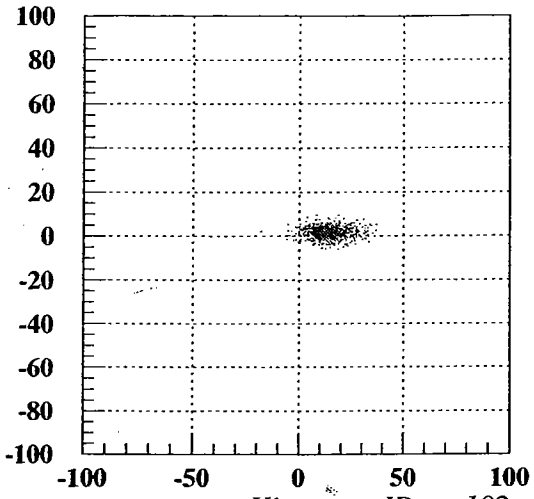
D1 = 694.051 mT

D2 = 628.427 mT

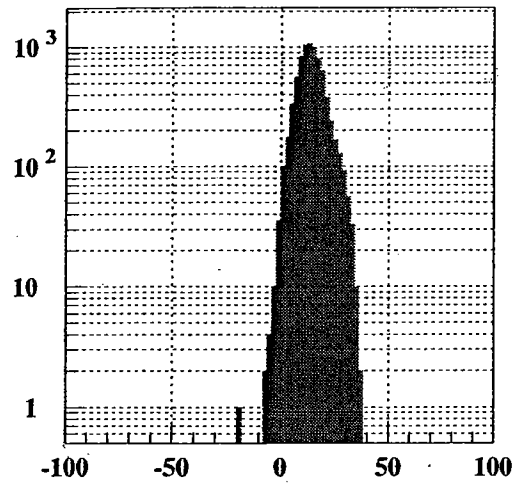
with F1PPAC. Veg (60mg/cm²) Charge state $Kr \rightarrow Kr^{36+}$



F1PPAC μμ



F2PPAC μμ



Prox.(F2PPAC μμ)

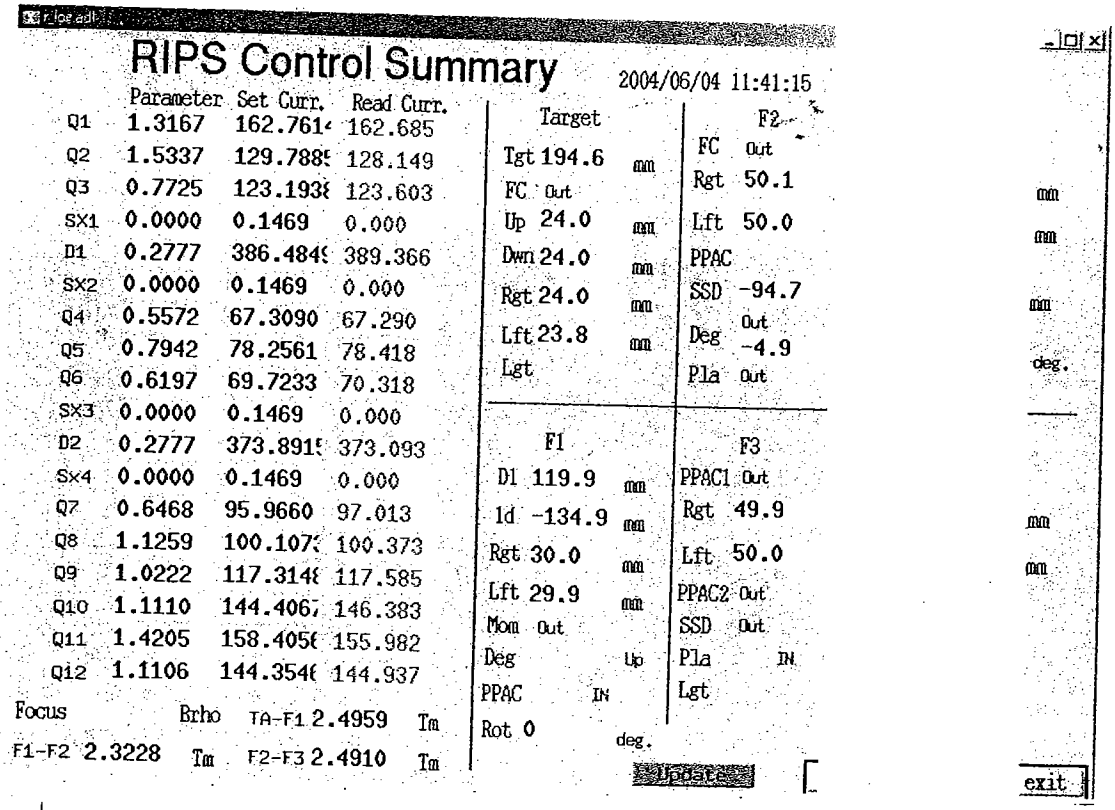
5701 (F2PPAC)

18176 (F1PPAC)

≈ 58,45%

47

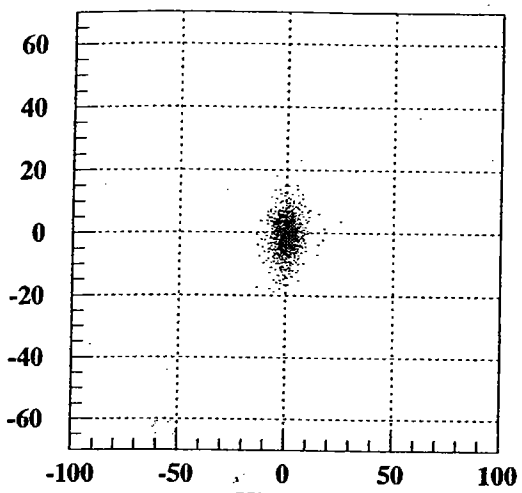
11:30 · Setting for Kr^{35+} with Wedge + FIPPAC.



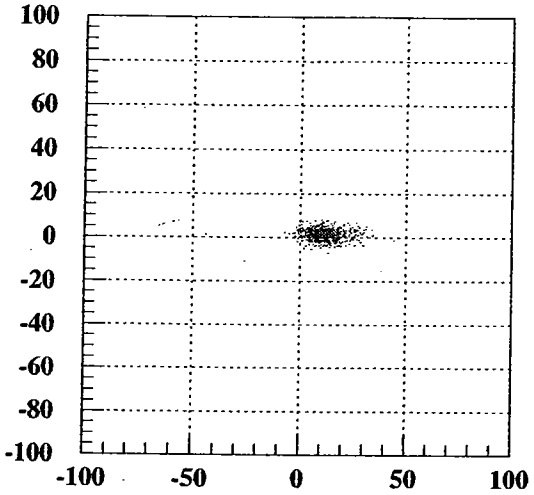
D1 = 694.051 mT

D2 = 646.138 mT

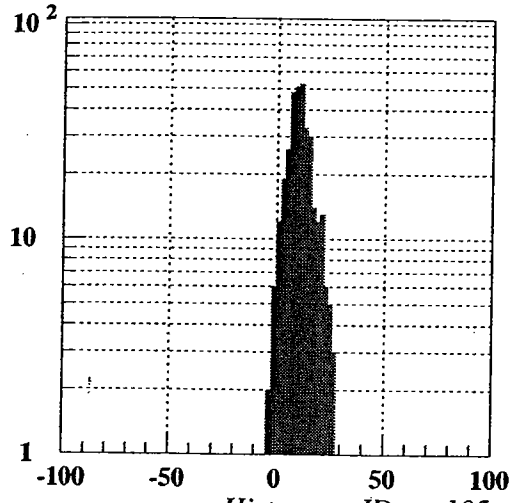
$^{86}Kr^{36+} \rightarrow {}^{86}Kr^{35+}$



F1PPAC μμ



F2PPAC μμ



Prox.(F2PPAC μμ)

$\frac{3206\ (F2PPAC)}{9272\ (F1PPAC)}$

$\sim 34.58\%$

$\frac{Kr^{35+}}{Kr^{36+}} \sim 58\%$

11:38 Setting for ^{347}Kr with Wedge and FIPPAC

RIPS Control Summary

2004/06/04 11:46:19

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.796
Q2	1.5337	129.788	128.386
Q3	0.7725	123.193	123.257
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.366
SX2	0.0000	0.1469	0.026
Q4	0.5572	67.3090	67.235
Q5	0.7942	80.6029	80.770
Q6	0.6197	71.8203	72.112
SX3	0.0000	0.1469	0.000
D2	0.2777	384.890	383.934
Sx4	0.0000	0.1469	0.000
Q7	0.6468	98.7916	100.103
Q8	1.1259	103.044	103.300
Q9	1.0222	120.793	120.969
Q10	1.1110	144.406	146.272
Q11	1.4205	158.405	156.798
Q12	1.1106	144.354	145.048

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.3911 Tm F2-F3 2.4910 Tm

Target

Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

D1 119.8 mm
Id -134.9 mm
Rgt 30.0 mm
Lft 30.0 mm
Mom Out
Deg Up
PPAC IN
Rot 0 deg.

F2

FC Out
Rgt 50.1 mm
Lft 50.0 mm
PPAC
SSD -94.7 mm
Deg Out -4.9 deg.
Pla Out

F3

PPAC1 Out
Rgt 49.9 mm
Lft 50.0 mm
PPAC2 Out
SSD Out
Pla IN
Lgt

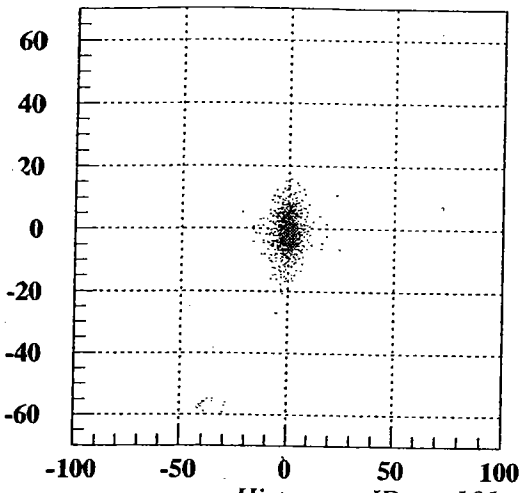
Update

exit

D1 = 694.052 mT

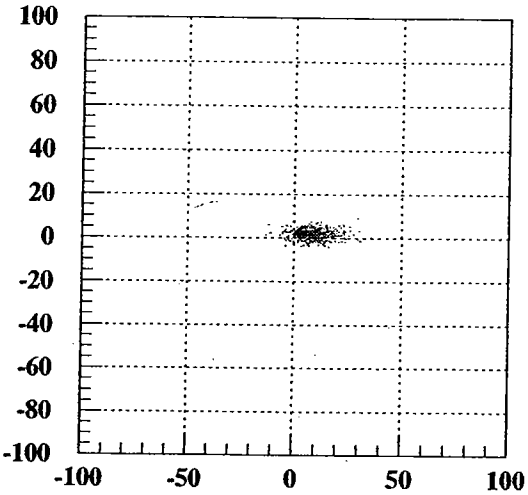
D2 = 664.932 mT

$^{86}Kr^{36+} \rightarrow {}^{86}Kr^{34+}$



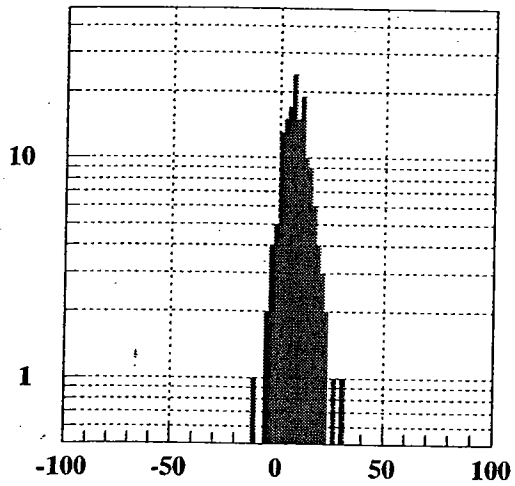
Histogram ID = 101

F1PPAC μμ



Histogram ID = 102

F2PPAC μμ



Histogram ID = 105

Prox.(F2PPAC μμ)

$\frac{604}{10614\ (F1PPAC)} \sim 5.6\%$

51

11:45 | Setting for ~~82~~ 331 Kr with Wedge and FIPPAC

RIPS Control Summary

2004/06/04 11:53:31

Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.908
Q2	1.5337	129.788	128.267
Q3	0.7725	123.193	123.517
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.366
SX2	0.0000	0.1469	0.000
Q4	0.5572	67.3090	67.344
Q5	0.7942	83.0218	83.122
Q6	0.6197	73.9818	74.288
SX3	0.0000	0.1469	0.000
D2	0.2777	396.226	394.511
Sx4	0.0000	0.1469	0.000
Q7	0.6468	101.7041	102.949
Q8	1.1259	106.071	106.385
Q9	1.0222	124.3801	124.541
Q10	1.1110	144.406	146.050
Q11	1.4205	158.405	156.798
Q12	1.1106	144.354	144.826

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.4615 Tm F2-F3 2.4910 Tm

Target

Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

D1 119.8 mm
Id -135.1 mm
Rgt 30.1 mm
Lft 29.9 mm
Mom Out
Deg Up
PPAC IN
Rot 0 deg.

F2

FC Out
Rgt 50.1 mm
Lft 50.0 mm
PPAC
SSD -94.8 mm
Out
Deg -4.9 deg.
Pla Out

F3

PPAC1 Out
Rgt 49.9 mm
Lft 50.0 mm
PPAC2 Out
SSD Out
Pla IN
Lgt

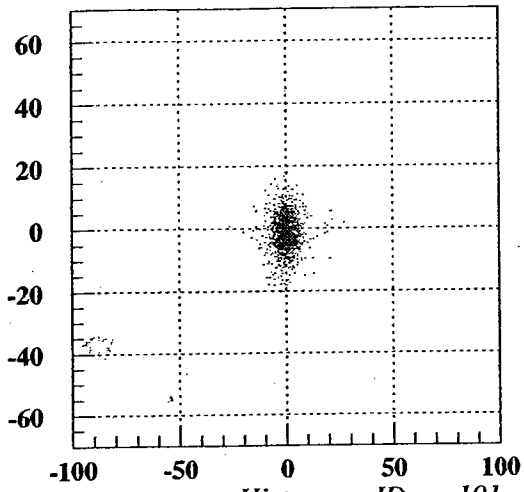
Update

exit

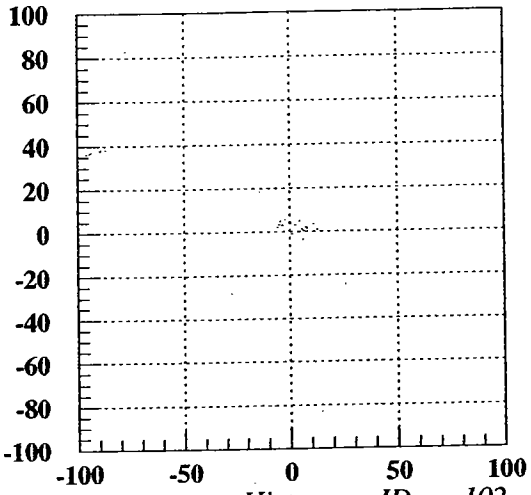
D1 = 694.053 mT

D2 = 684.443 mT

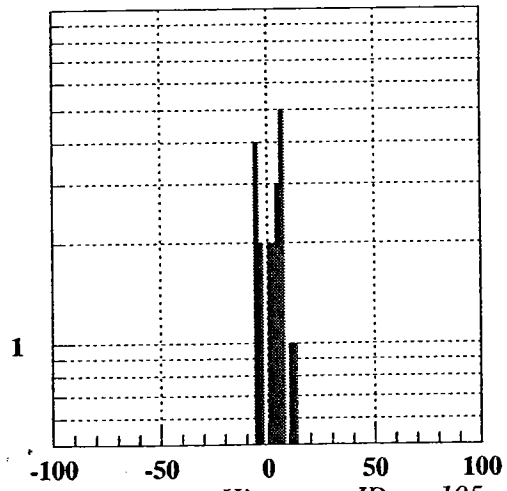
$^{86}Kr^{36+} \rightarrow {}^{86}Kr^{33+}$



F1PPAC μμ



F2PPAC μμ



Prox.(F2PPAC μμ)

$$\frac{20 \text{ (F2PPAC)}}{15006 \text{ (F1PPAC)}} = 0.13\%$$

11:50 34^+ data was taken again.

	Al wedge + FIPPAC			FIPPAC only.
F36+	58.45 c/o →	59.2		86 c/o.
35+	34.58 →	35.0		12 c/o
34+	5.69 →	5.76		0.54 c/o
33+	0.13 →	0.13		—
	98.85 c/o		100 c/o	98.54 c/o

PPAC F2 eff.

F2 PPAC eff is not 100 c/o for the beam.

HV is bit lower.

But we do not change HV's.

RIPS Control Summary

2004/06/04 11:59:17

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.7614	162.796
Q2	1.5337	129.7885	128.267
Q3	0.7725	123.1938	123.430
Sx1	0.0000	0.1469	0.000
D1	0.2777	386.4849	388.837
Sx2	0.0000	0.1469	0.000
Q4	0.5572	67.3090	67.181
Q5	0.7942	80.6029	80.708
Q6	0.6197	71.8203	72.112
Sx3	0.0000	0.1469	0.000
D2	0.2777	384.8900	383.934
Sx4	0.0000	0.1469	0.000
Q7	0.6468	98.7916	99.859
Q8	1.1259	103.0445	103.221
Q9	1.0222	120.7939	120.781
Q10	1.1110	144.4067	146.272
Q11	1.4205	158.4056	156.798
Q12	1.1106	144.3546	145.048

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.3911 Tm F2-F3 2.4910 Tm

Target

Tgt 194.5 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

D1 119.8 mm
1d -135.1 mm
Rgt 30.1 mm
Lft 30.0 mm
Mom Out
Deg Up
PPAC IN
Rot 0 deg.

F2

FC Out
Rgt 50.1 mm
Lft 50.0 mm
PPAC
SSD -94.8 mm
Deg Out -4.9 deg.
Pla Out

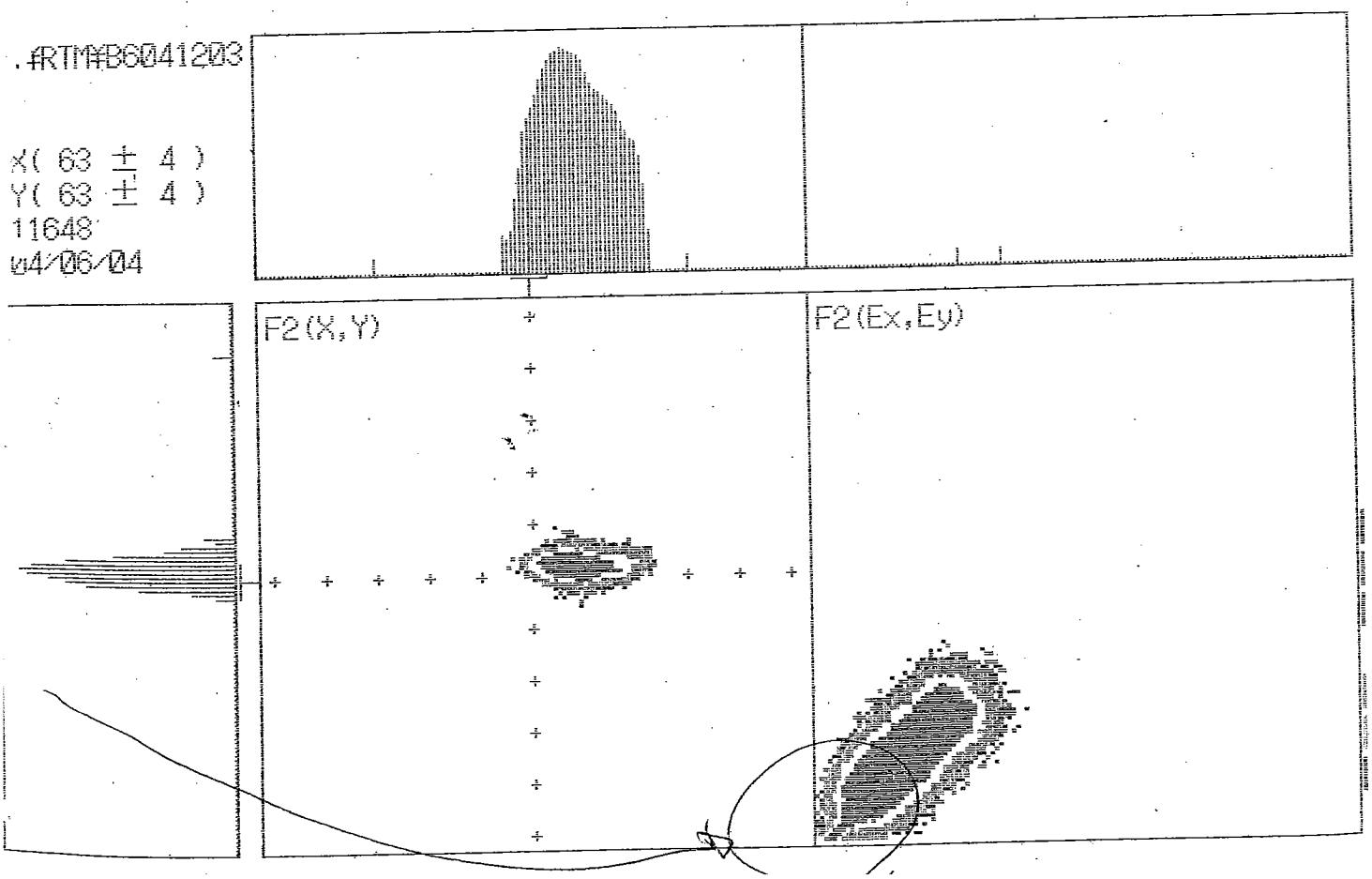
F3

PPAC1 Out
Rgt 49.9 mm
Lft 50.0 mm
PPAC2 Out
SSD Out
Pla IN
Lgt

Update

exit

Bo = 665.17 mT



w/ F1 PPAC

w/o 60mg wedge.

RIPS Control Summary

2004/06/04 12:04:23

Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761 162.685
Q2	1.5337	129.788 128.267
Q3	0.7725	123.193 123.603
SX1	0.0000	0.1469 0.000
D1	0.2777	386.484 389.366
SX2	0.0000	0.1469 0.000
Q4	0.5572	67.3090 67.344
Q5	0.7942	84.0148 84.174
Q6	0.6197	74.8692 75.321
SX3	0.0000	0.1469 0.000
D2	0.2777	400.880 400.063
Sx4	0.0000	0.1469 0.000
Q7	0.6468	102.899 104.007
Q8	1.1259	107.314 107.650
Q9	1.0222	125.852 126.232
Q10	1.1110	144.406 146.383
Q11	1.4205	158.405 155.982
Q12	1.1106	144.354 145.048

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.4904 Tm F2-F3 2.4910 Tm

Target	
Tgt	194.6 mm
FC	Out
Up	24.0 mm
Dwn	24.0 mm
Rgt	24.0 mm
Lft	23.8 mm
Lgt	

F1	
D1	119.8 mm
Id	-135.1 mm
Rgt	30.1 mm
Lft	30.0 mm
Mom	Out
Deg	Exp
PPAC	IN
Rot	0 deg.

F2	
FC	Out
Rgt	50.1
Lft	50.0
PPAC	
SSD	-94.8
Deg	Out -4.9
Pla	Out

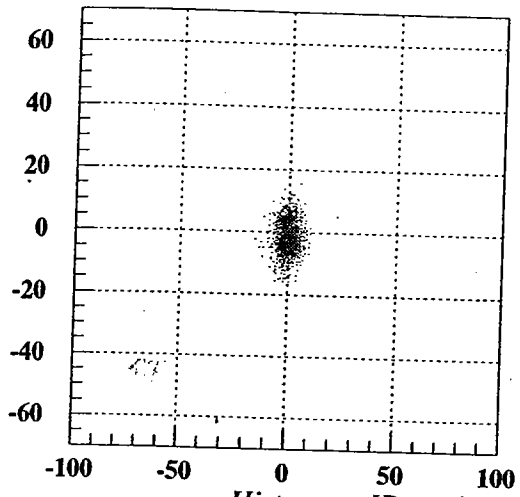
F3	
PPAC1	Out
Rgt	49.9
Lft	50.0
PPAC2	Out
SSD	Out
Pla	IN
Lgt	

Update

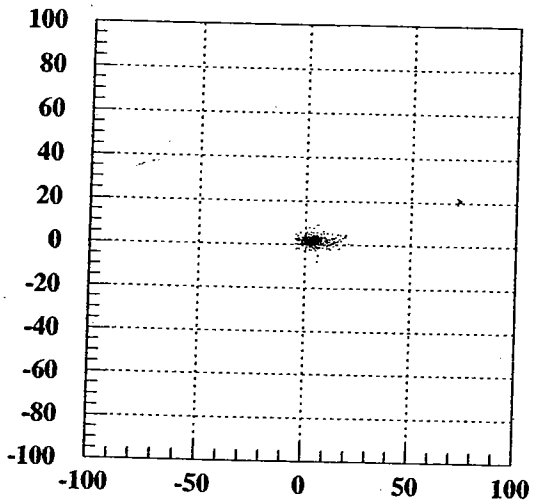
mm mm mm deg. mm mm

exit

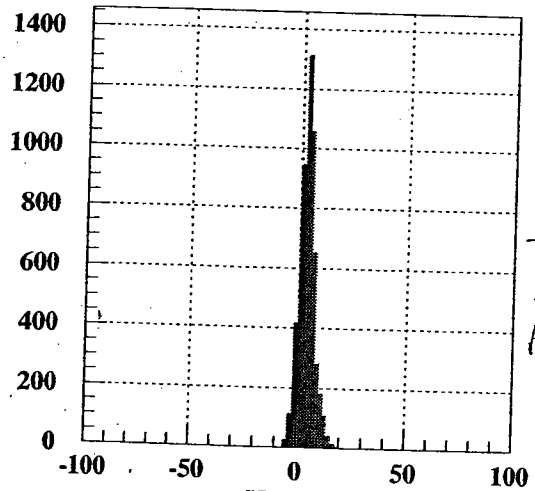
B2 = 692.4 mT



F1PPAC μμ



F2PPAC μμ



Prox.(F2PPAC μμ)

$\frac{\text{F2PPAC}}{\text{Analyzed}} = \frac{5766}{5978} \sim 86\%$

57

354

RIPS Control Summary

2004/06/04 12:11:39

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.761	162.685
Q2	1.5337	129.788	127.912
Q3	0.7725	123.193	123.343
SX1	0.0000	0.1469	0.000
D1	0.2777	386.484	389.102
SX2	0.0000	0.1469	0.000
Q4	0.5572	67.3090	67.290
Q5	0.7942	86.4577	86.588
Q6	0.6197	77.0522	77.333
SX3	0.0000	0.1469	0.000
D2	0.2777	412.330	411.962
SX4	0.0000	0.1469	0.079
Q7	0.6468	105.8411	106.527
Q8	1.1259	110.372	110.656
Q9	1.0222	129.4741	129.616
Q10	1.1110	144.406	146.161
Q11	1.4205	158.405	156.118
Q12	1.1106	144.354	144.937

Focus Brho TA-F1 2.4959 Tm

F1-F2 2.5615 Tm F2-F3 2.4910 Tm

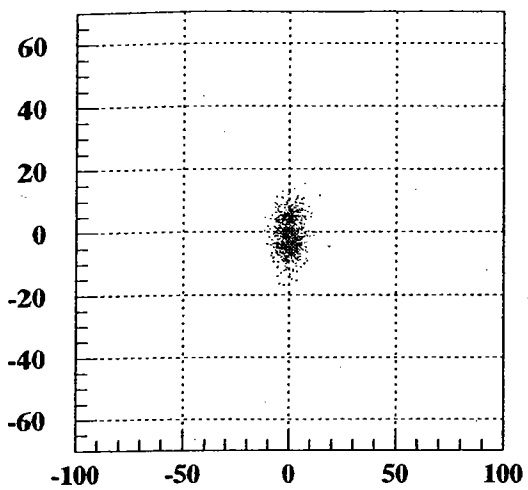
Target		F2	
Tgt	194.6 mm	FC	Out
FC	Out	Rgt	50.1
Up	24.0 mm	Lft	50.0
Dwn	24.0 mm	PPAC	
Rgt	24.0 mm	SSD	-94.8
Lft	23.8 mm	Deg	Out -4.9
Lgt		Pla	Out

F1		F3	
D1	119.8 mm	PPAC1	Out
Id	-135.1 mm	Rgt	49.9
Rgt	30.1 mm	Lft	50.0
Lft	30.0 mm	PPAC2	Out
Mom	Out	SSD	Out
Deg	Exp	Pla	IN
PPAC	IN	Lgt	
Rot	0 deg.		

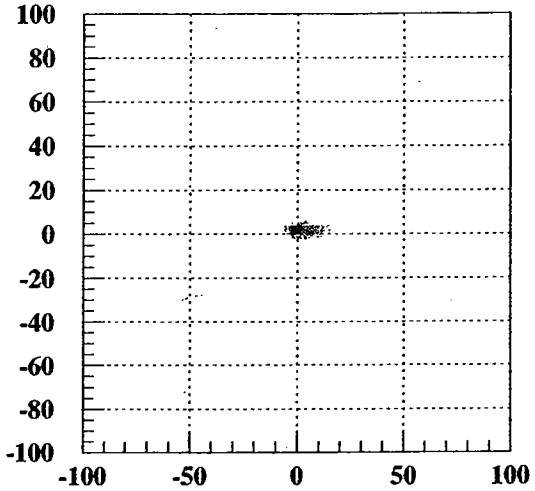
Update

exit

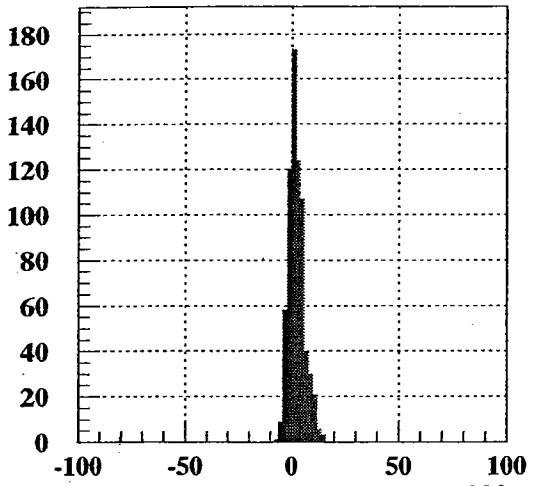
D2= 412.02 in T



F1PPAC μμ



F2PPAC μμ



Prox.(F2PPAC μμ)

$\frac{\text{F2PPAC}}{\text{Analyed}} = \frac{692}{5621} \sim 12\%$

34+

RIPS Control Summary

2004/06/04 12:19:25

Parameter	Set Curr.	Read Curr.
Q1	1.3167	162.7614 162.574
Q2	1.5337	129.7885 128.267
Q3	0.7725	123.1938 123.517
SX1	0.0000	0.1469 0.000
D1	0.2777	386.4849 389.631
SX2	0.0000	0.1469 0.000
Q4	0.5572	67.3090 67.235
Q5	0.7942	89.0450 89.187
Q6	0.6197	79.3641 79.672
SX3	0.0000	0.1469 0.000
D2	0.2777	424.4557 423.597
Sx4	0.0000	0.1469 0.000
Q7	0.6468	108.9563 109.943
Q8	1.1259	113.6104 113.899
Q9	1.0222	133.3098 133.470
Q10	1.1110	144.4067 146.161
Q11	1.4205	158.4056 156.934
Q12	1.1106	144.3546 145.048

Focus Brho TA-F1 2.4959 Tm
F1-F2 2.6368 Tm F2-F3 2.4910 Tm

Target
Tgt 194.5 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F2
FC Out
Rgt 50.1
Lft 50.0
PPAC
SSD -94.7
Deg Out -4.9
Pla Out

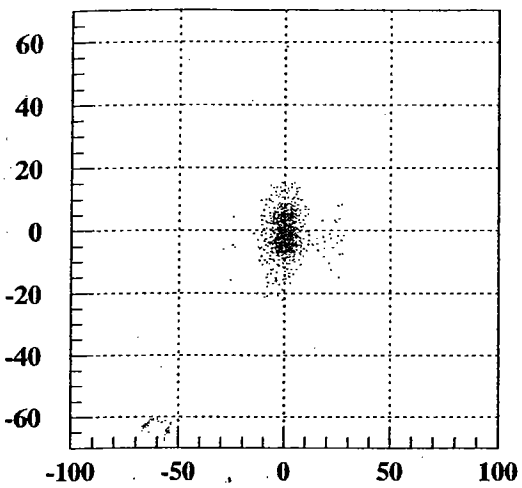
F1
D1 119.9 mm
Id -134.9 mm
Rgt 30.0 mm
Lft 30.0 mm
Mom Out
Deg Emp
PPAC IN
Rot 0 deg.

F3
PPAC1 Out
Rgt 50.0
Lft 50.0
PPAC2 Out
SSD Out
Pla IN
Lgt

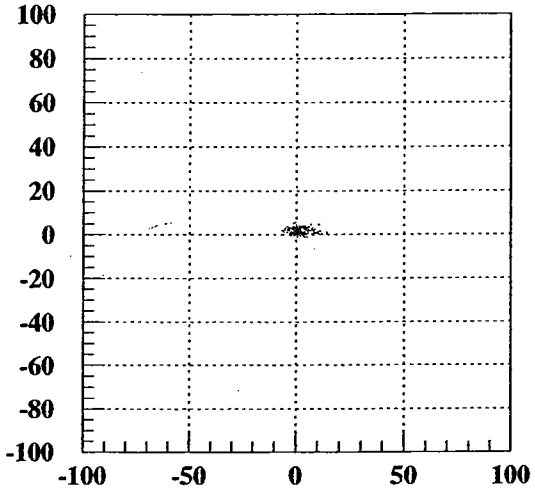
Update

exit

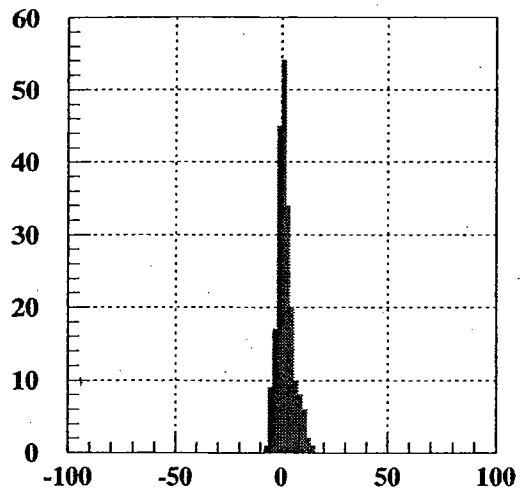
D2 = 732.85 mT



F1PPAC μμ



F2PPAC μμ



Prox.(F2PPAC μμ)

$$\frac{\text{F2PPAC}}{\text{Analyed}} = \frac{207}{38673} \sim 0.54\%$$

A/Z = 2

- PPAC HV
- PL HV } check

- HV cable for F2 SSD was not connected to the preamplifier for SSD.

  → the HV was connected.

  SSD I = 0.6 μA.

- trigger F2L plastic.
- F1 slit ±3mm
- F1 ppac out
  deg out
- F2 PL in.
  Ppac in.
  SSD out.
- F3 PL in.

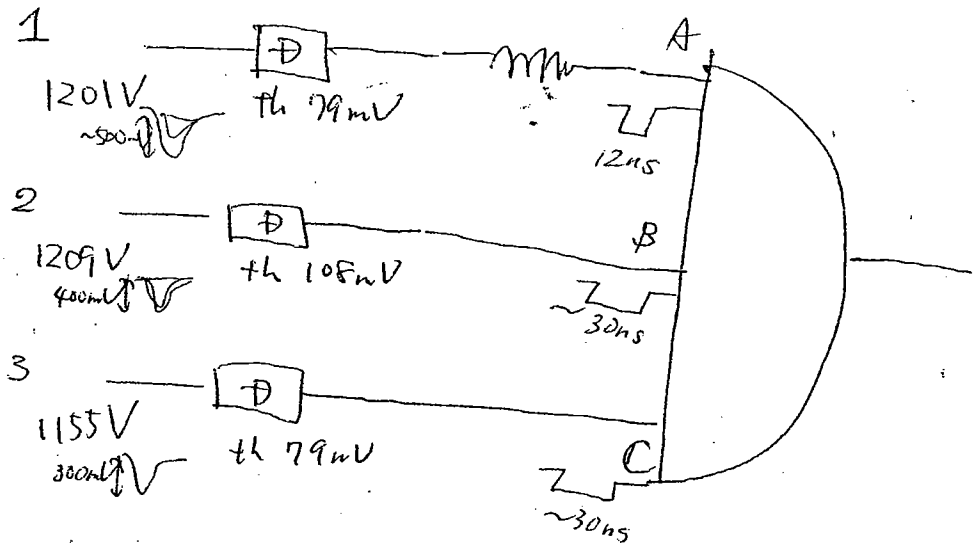
attenator of the beam.

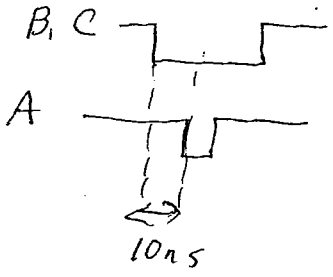
ion source slit close.

linear $\frac{1}{60}$ att.

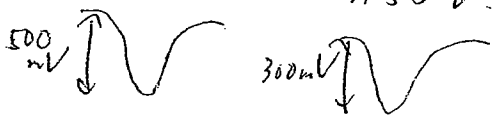
OKUNO

BY H.S.





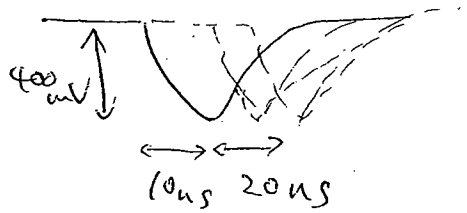
Okuno 1 HV 1201V → 1155V



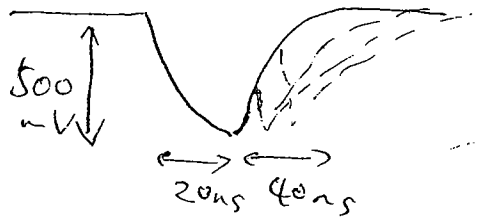
Okuno 2 th 79mV

108mV

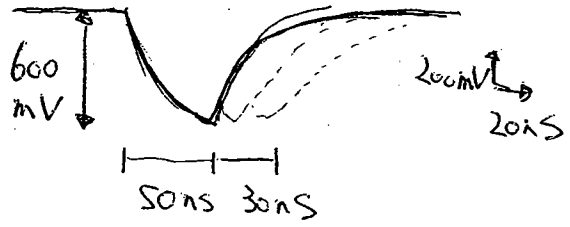
F2 PL 良 LT



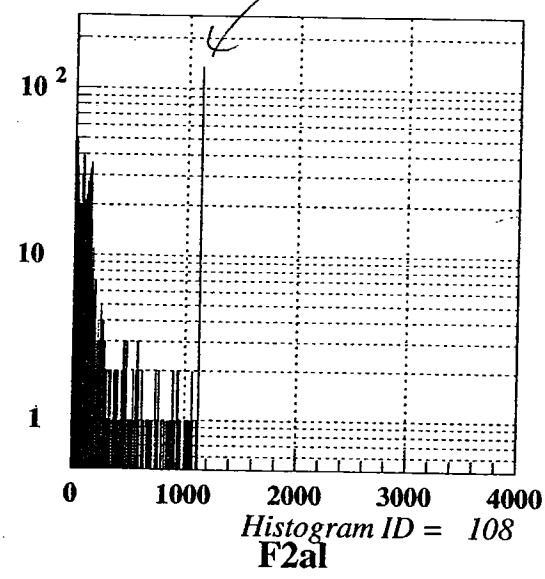
RT



F3 PL LT

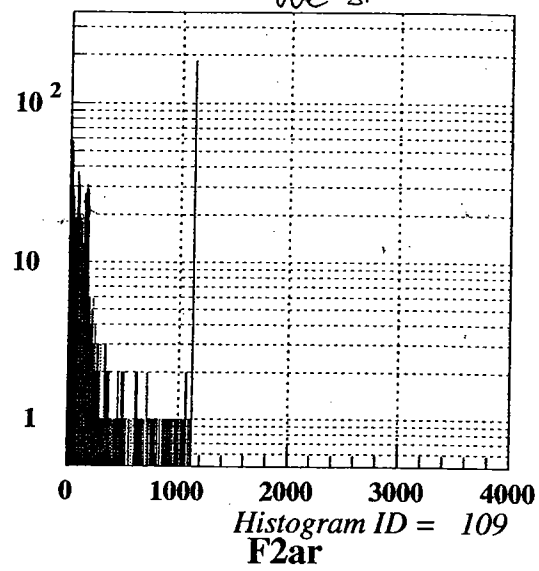


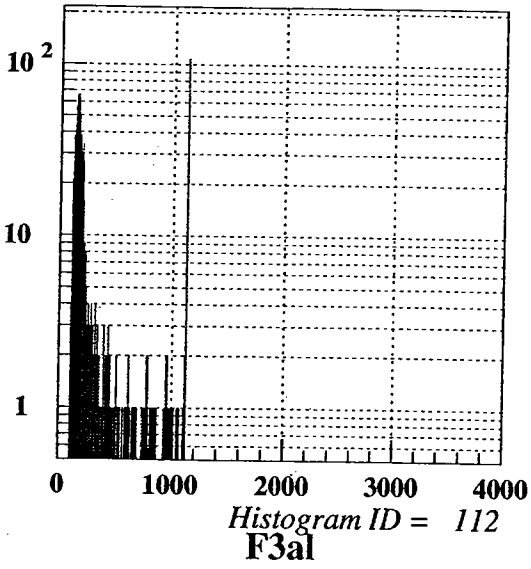
RT

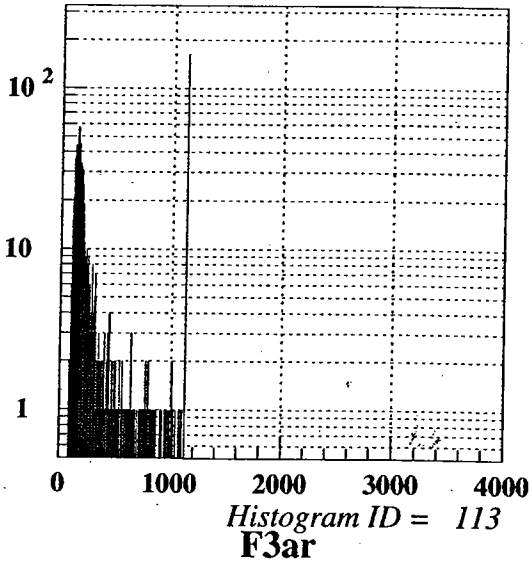


over flow!

After that. check again.
We shold not forget







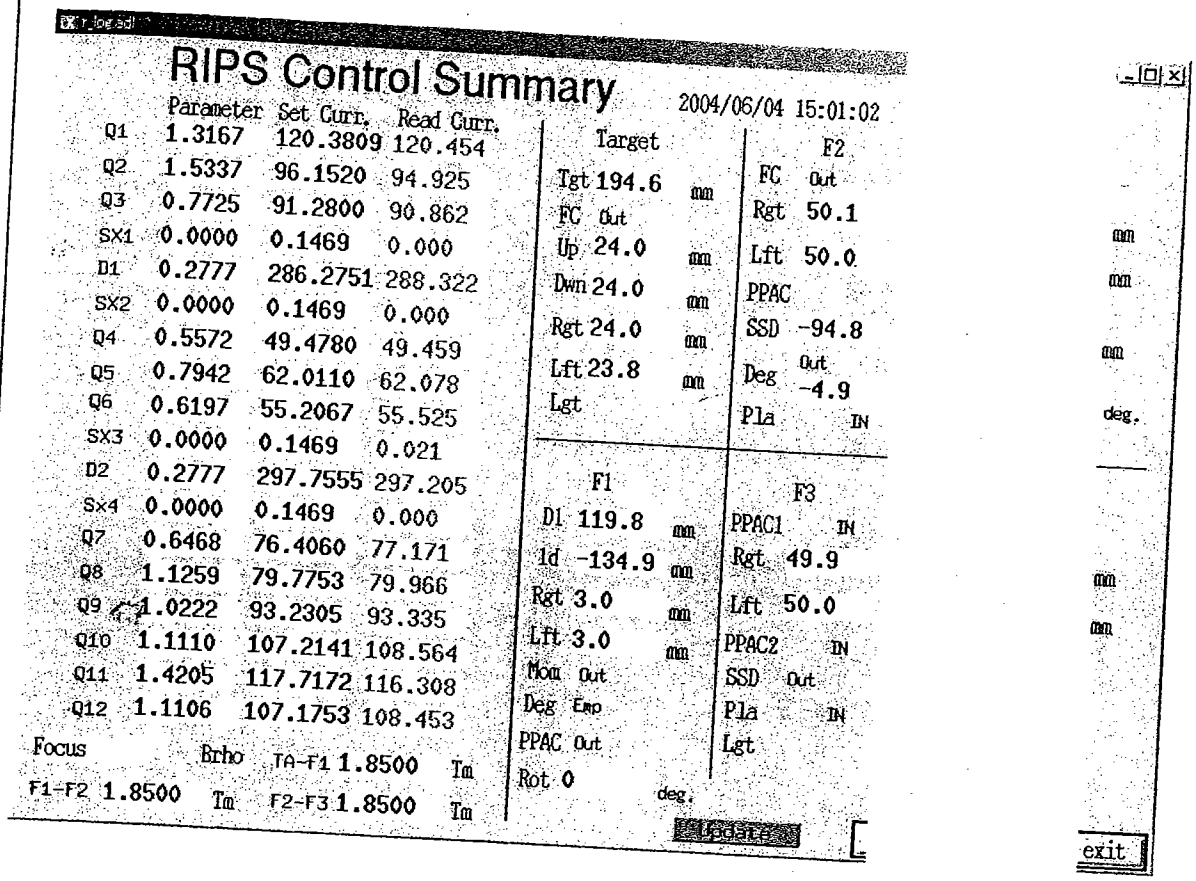
Bρ Setting was changed

Att LINIAC · $\frac{1}{100}$

200 cps

P1 = 514.710mT

P2 = ~~514~~. 521 mT



RIPS Control Summary

2004/06/04 15:01:02

Parameter	Set Curr.	Read Curr.
Q1	1.3167	120.3809 120.454
Q2	1.5337	96.1520 94.925
Q3	0.7725	91.2800 90.862
SX1	0.0000	0.1469 0.000
D1	0.2777	286.2751 288.322
SX2	0.0000	0.1469 0.000
Q4	0.5572	49.4780 49.459
Q5	0.7942	62.0110 62.078
Q6	0.6197	55.2067 55.525
SX3	0.0000	0.1469 0.021
D2	0.2777	297.7555 297.205
Sx4	0.0000	0.1469 0.000
Q7	0.6468	76.4060 77.171
Q8	1.1259	79.7753 79.966
Q9	1.0222	93.2305 93.335
Q10	1.1110	107.2141 108.564
Q11	1.4205	117.7172 116.308
Q12	1.1106	107.1753 108.453

Focus Brho TA-F1 1.8500 Tm

F1-F2 1.8500 Tm F2-F3 1.8500 Tm

Target

Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

D1 119.8 mm
Id -134.9 mm
Rgt 3.0 mm
Lft 3.0 mm
Mom Out
Deg Emp
PPAC Out
Rot 0 deg.

F2

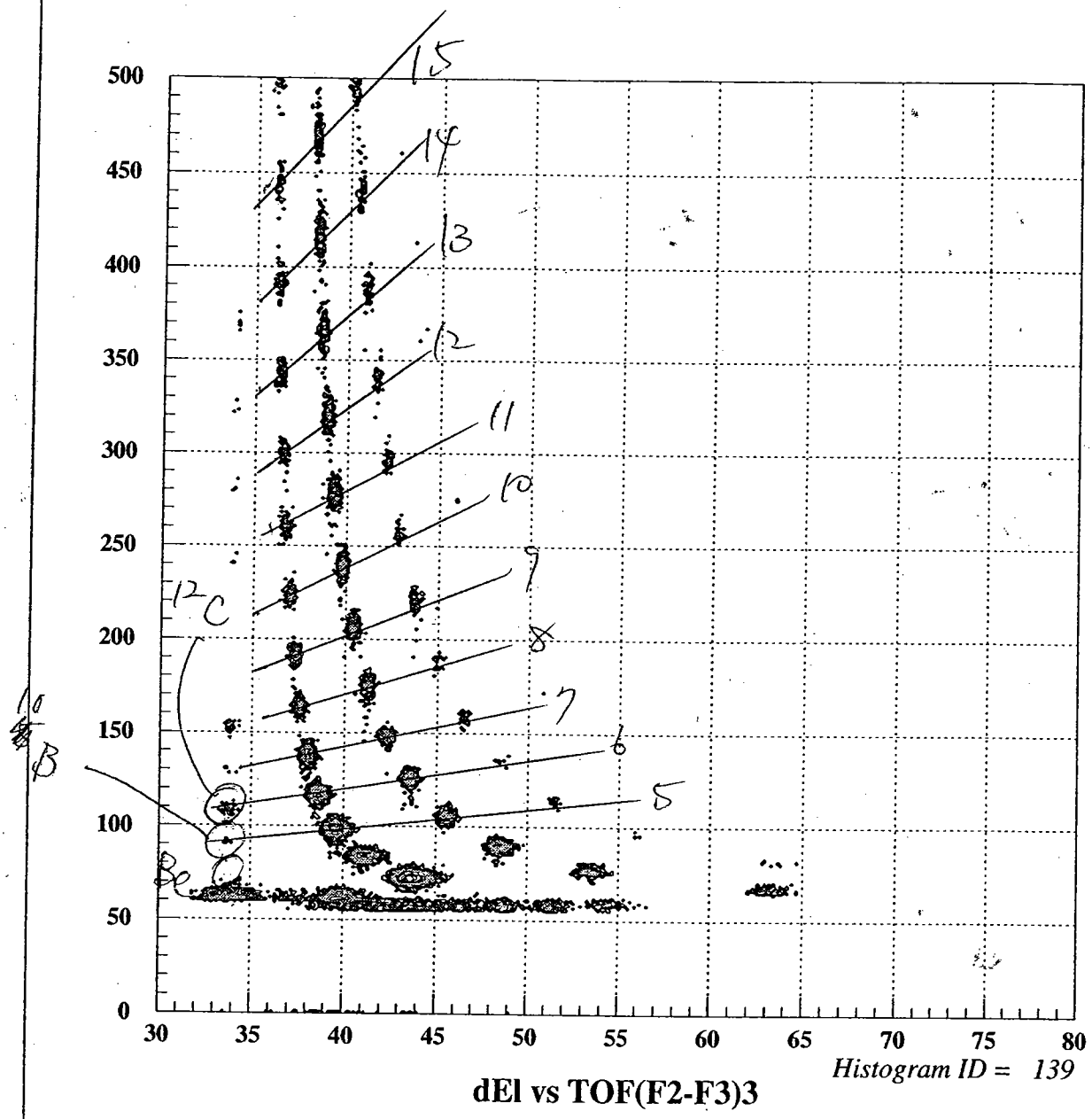
FC Out
Rgt 50.1
Lft 50.0
PPAC
SSD -94.8
Deg Out -4.9
Pla IN

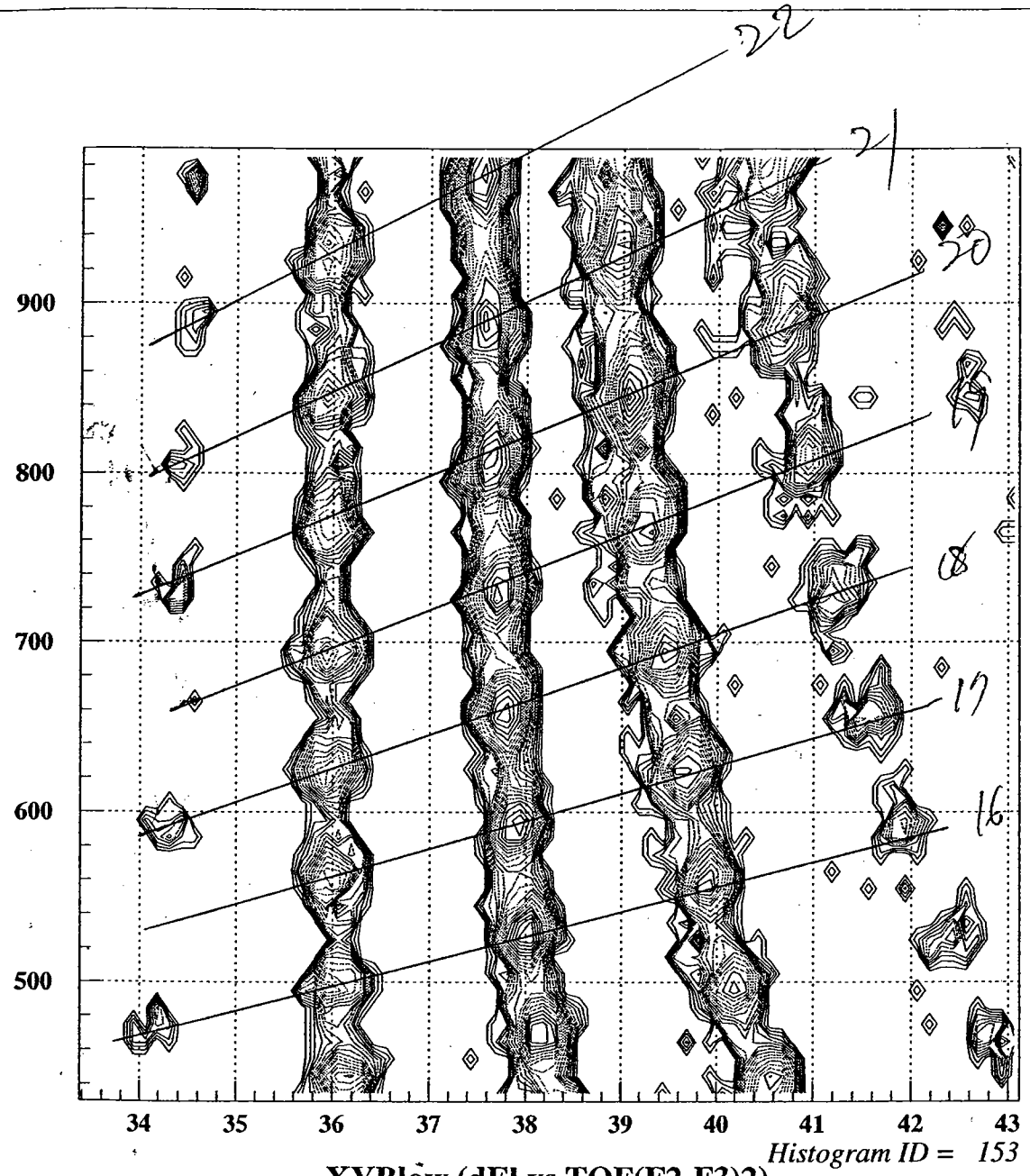
F3

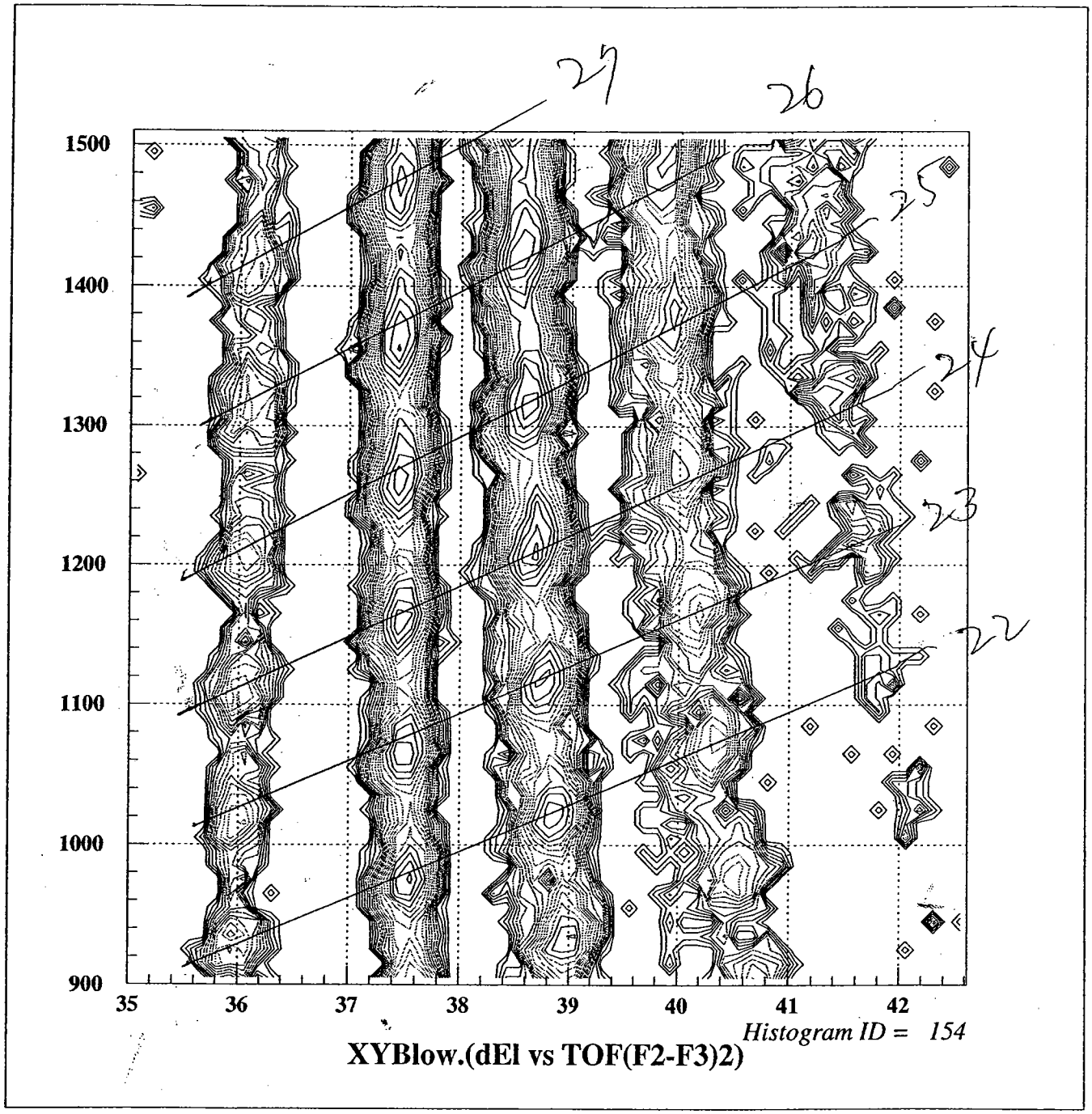
PPAC1 IN
Rgt 49.9
Lft 50.0
PPAC2 IN
SSD Out
Pla IN
Lgt

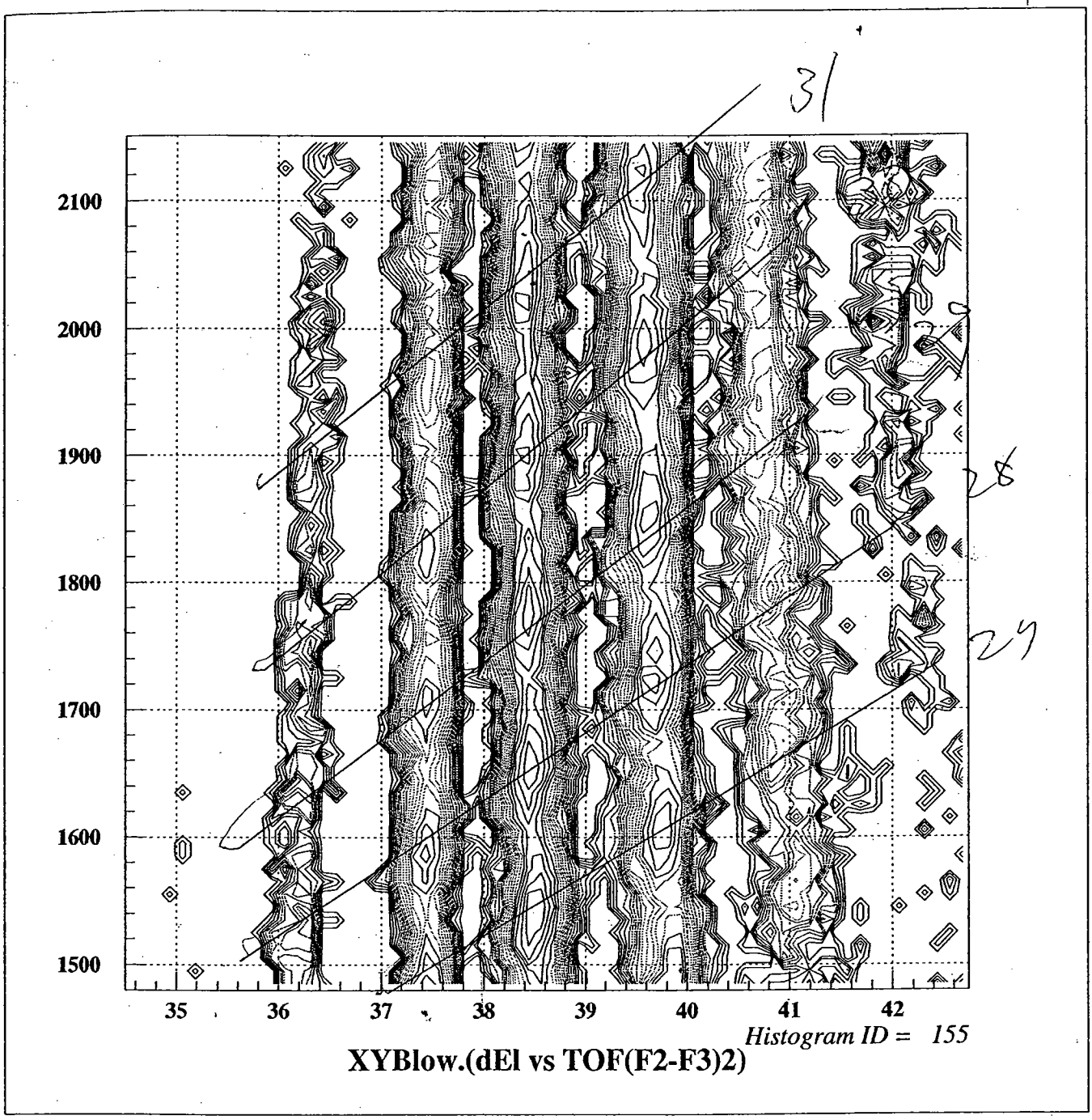
Update

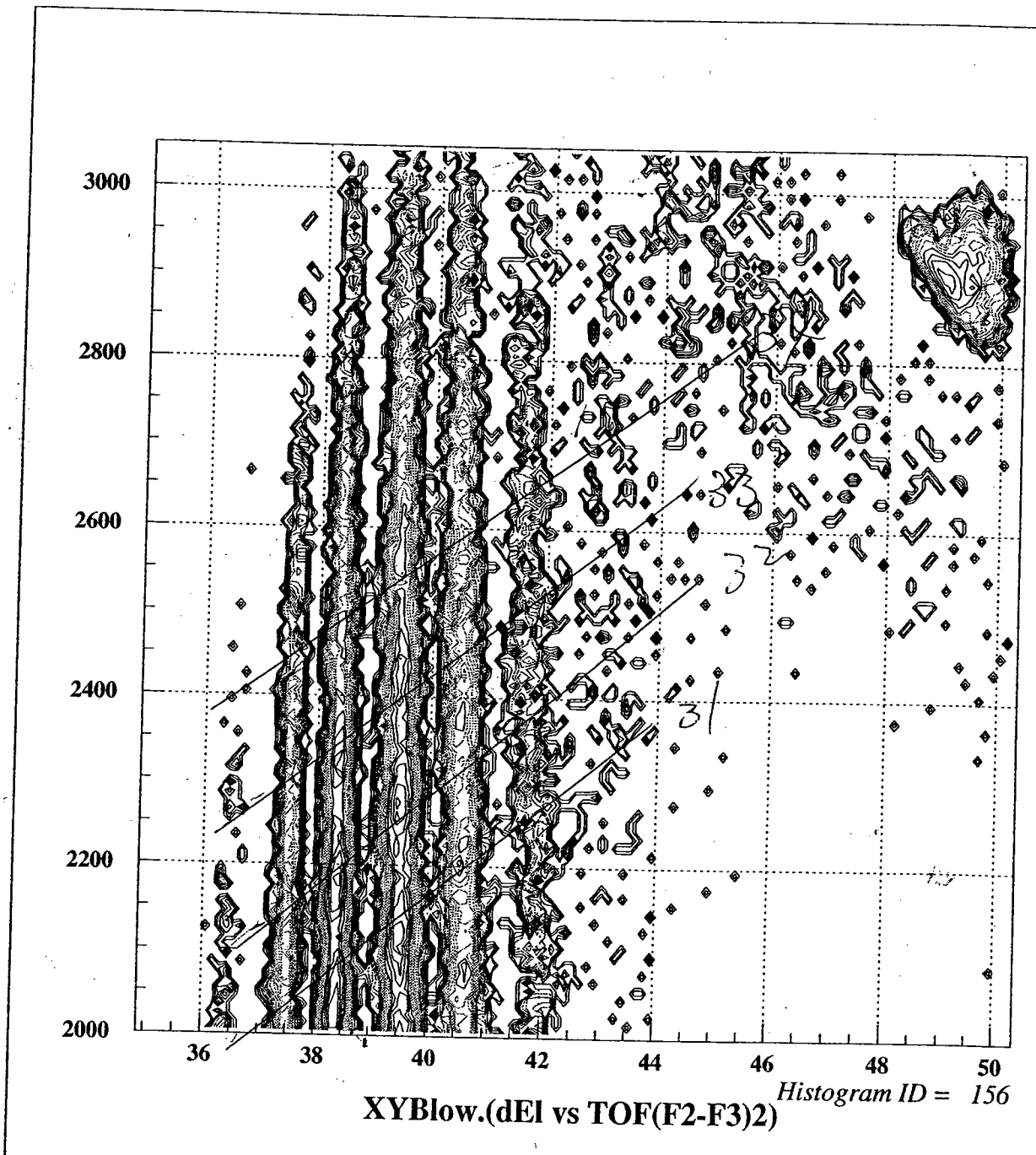
exit

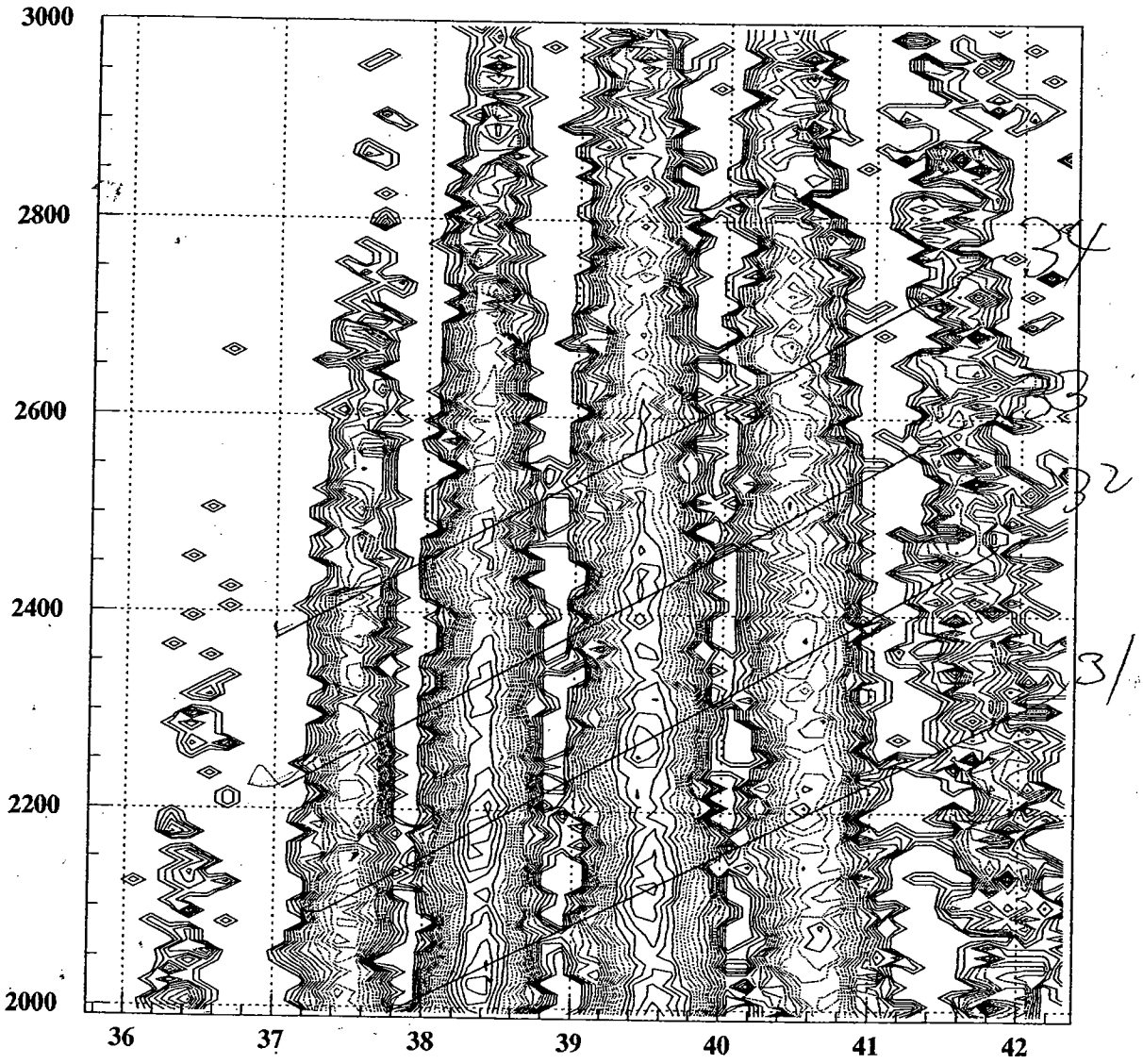

500
450
400
350
300
250
200
150
100
50
0
30
35
40
45
50
55
60
65
70
75
80
15
14
13
12
11
10
9
8
7
6
5
^{12}C
B
Be
Histogram ID = 139
dEl vs TOF(F2-F3)3


22
21
20
19
18
17
16
900
800
700
600
500
34
35
36
37
38
39
40
41
42
43
Histogram ID = 153
XYBlow.(dEl vs TOF(F2-F3)2)


27
26
25
24
23
22
1500
1400
1300
1200
1100
1000
900
35
36
37
38
39
40
41
42
Histogram ID = 154
XYBlow.(dEl vs TOF(F2-F3)2)

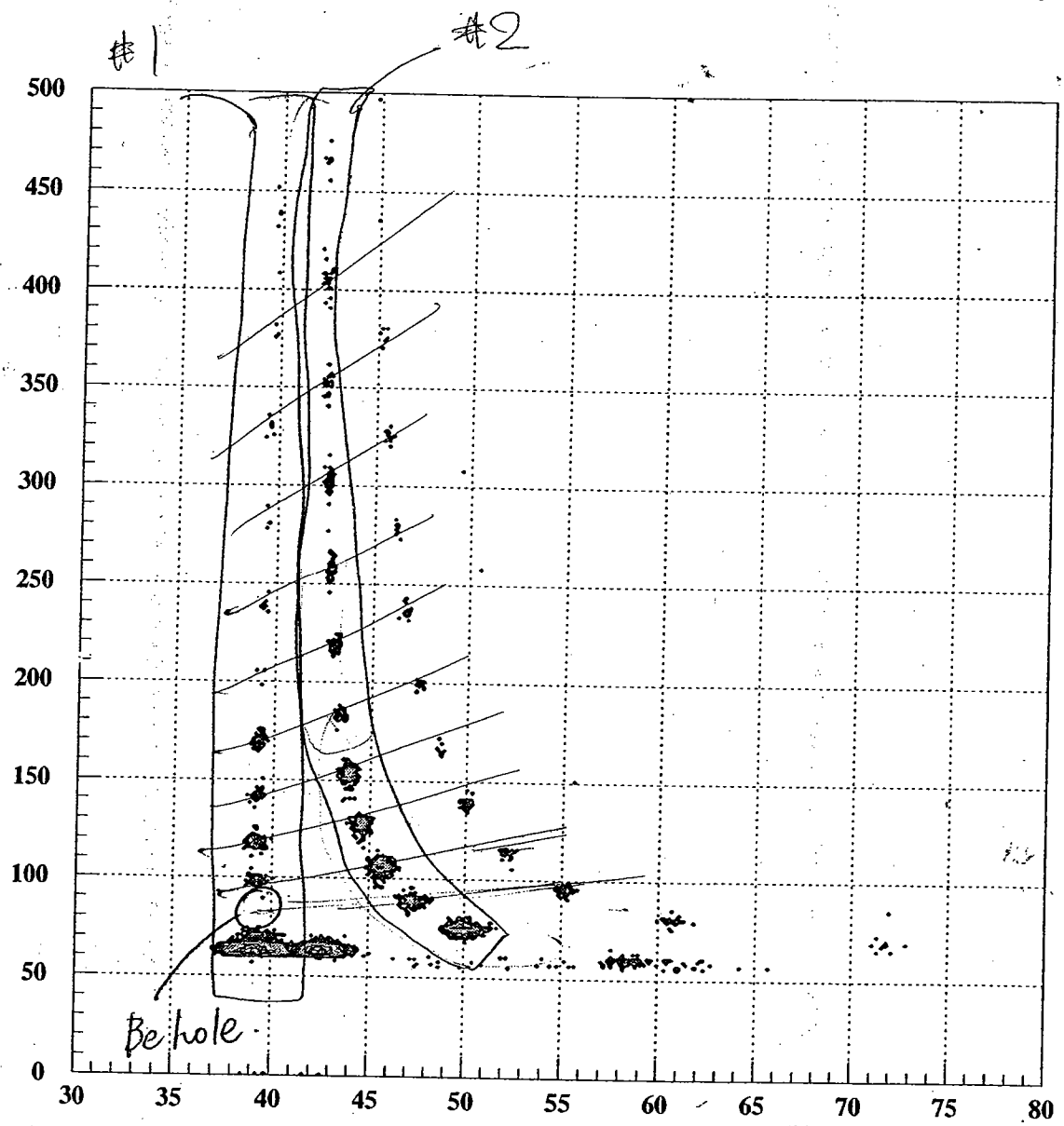

31
28
27
2100
2000
1900
1800
1700
1600
1500
35
36
37
38
39
40
41
42
Histogram ID = 155
XYBlow.(dEl vs TOF(F2-F3)2)


3000
2800
2600
2400
2200
2000
36
38
40
42
44
46
48
50
3
3
3
3
1
Histogram ID = 156
XYBlow.(dEl vs TOF(F2-F3)2)

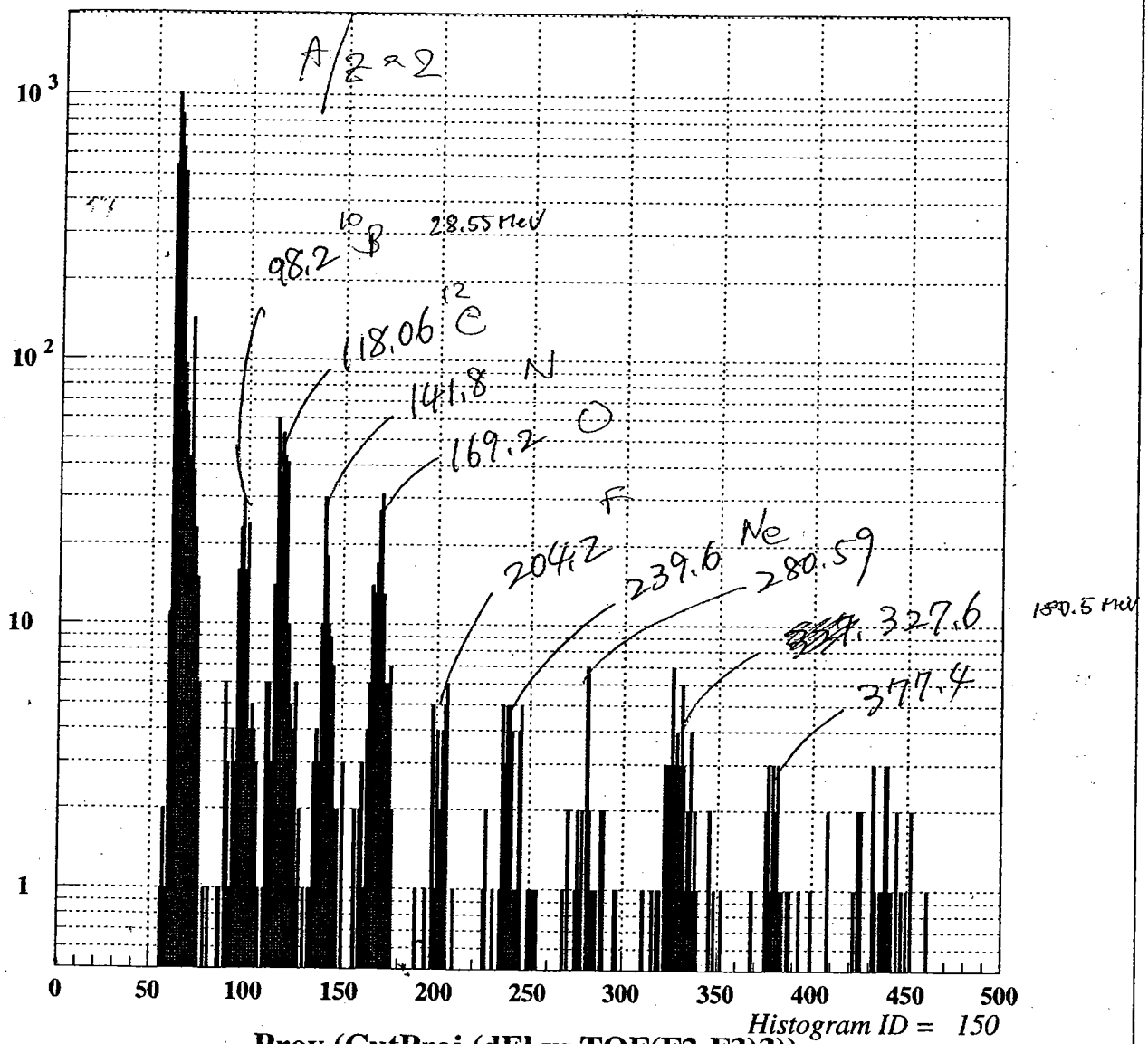


Histogram ID = 157

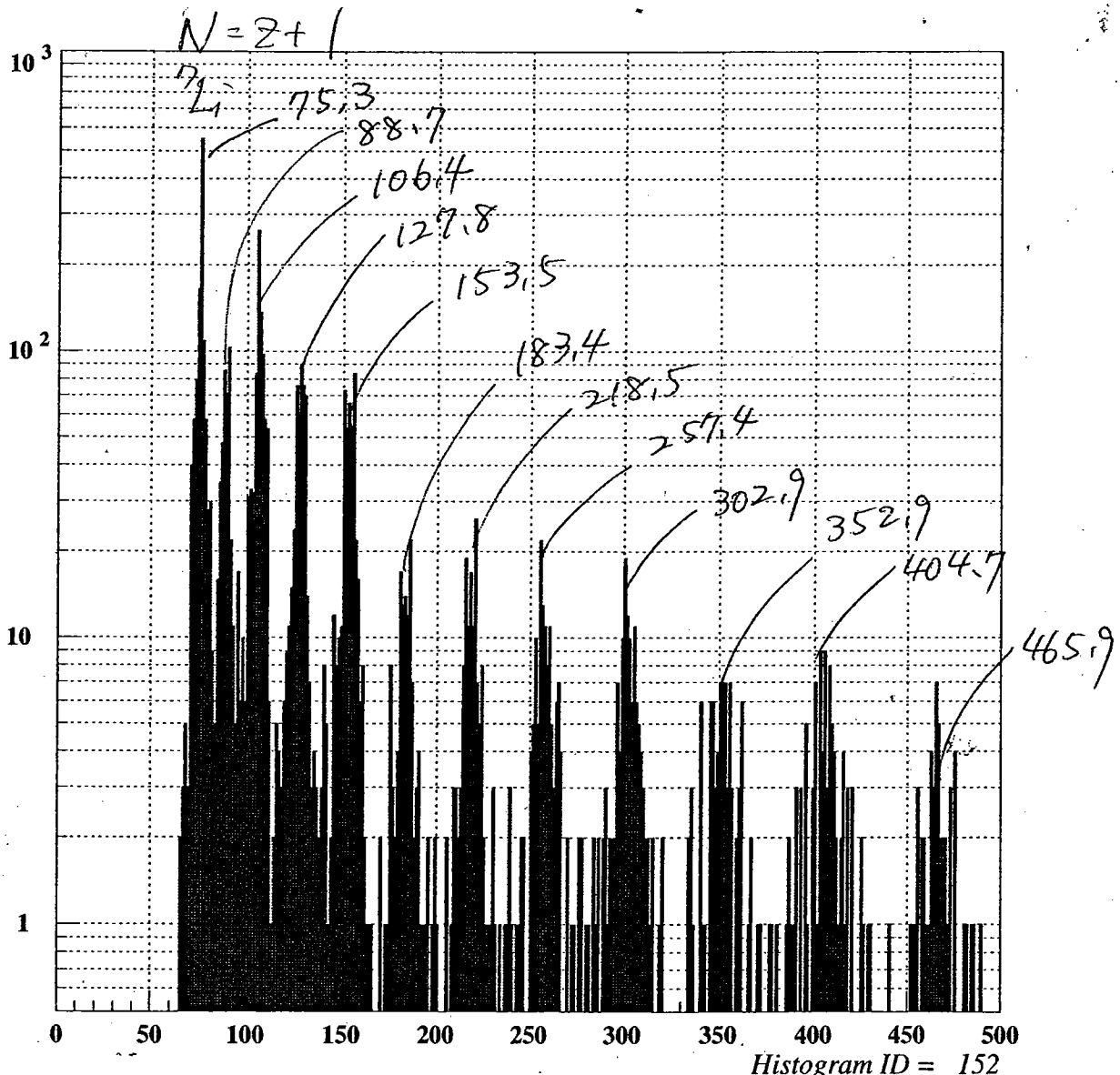
XYBlow.(dEl vs TOF(F2-F3)2)



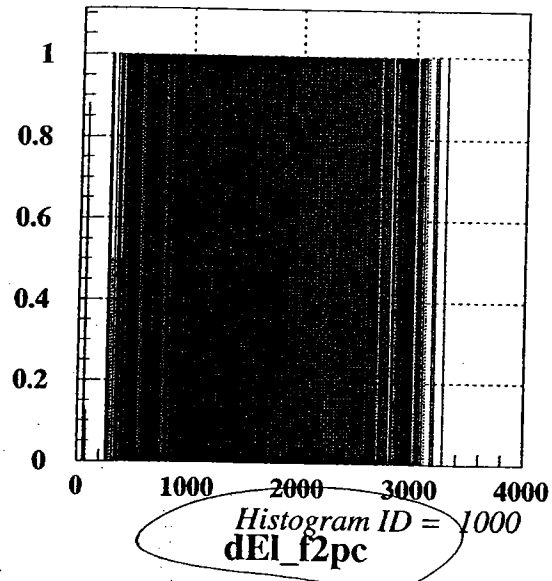
dEl vs TOF(F2-F3)3

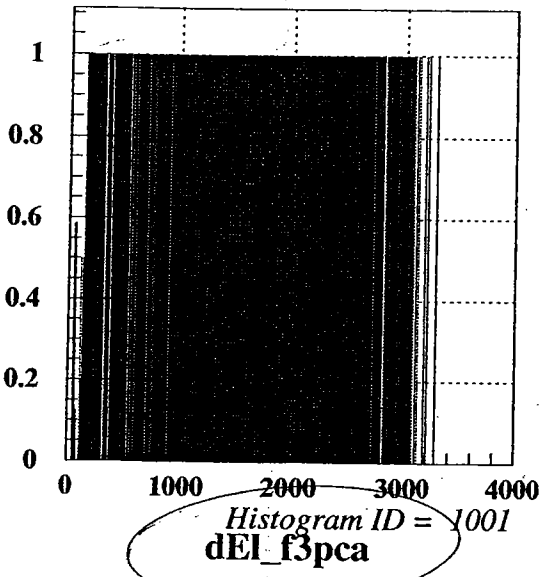


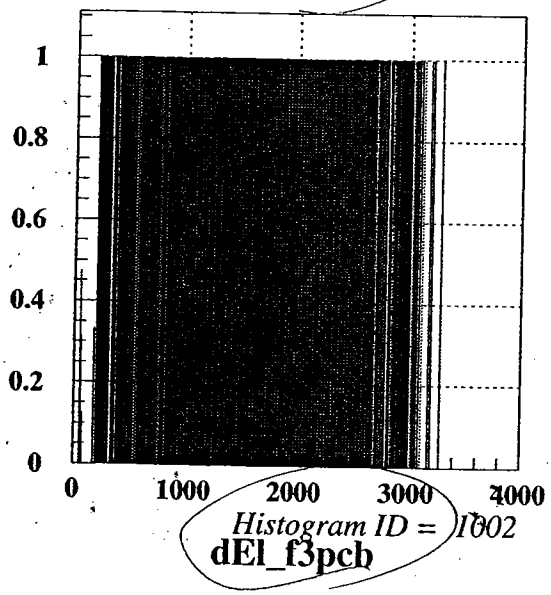
Proy.(CutProj.(dEl vs TOF(F2-F3)3))


N = Z + 1
75.3
88.7
106.4
127.8
153.5
183.4
218.5
257.4
302.9
352.9
404.7
465.9
10 3
10 2
10
1
0
50
100
150
200
250
300
350
400
450
500
Histogram ID = 152
Proy.(CutProj.(dEl vs TOF(F2-F3)3))

check ~~#~~ eff. of PPACs







~~F1 750~~

F2 753 ✓

F3a 756 ✓

F3b 756 ✓

See also p 84

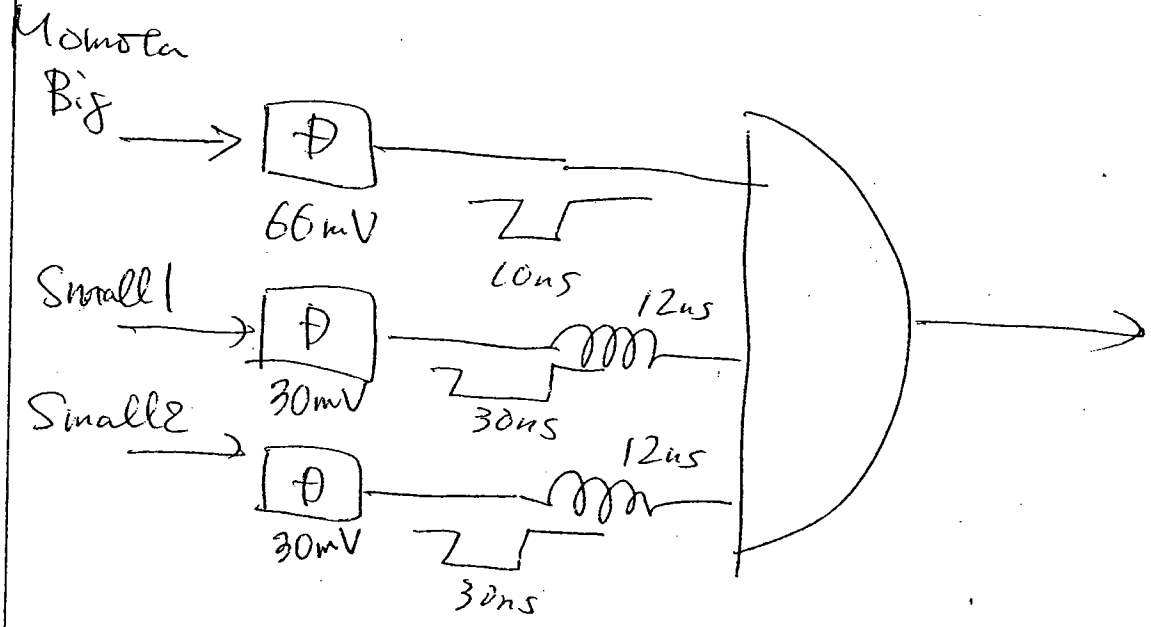
F2, F3. Pl.

To add Attenuator for QDC.

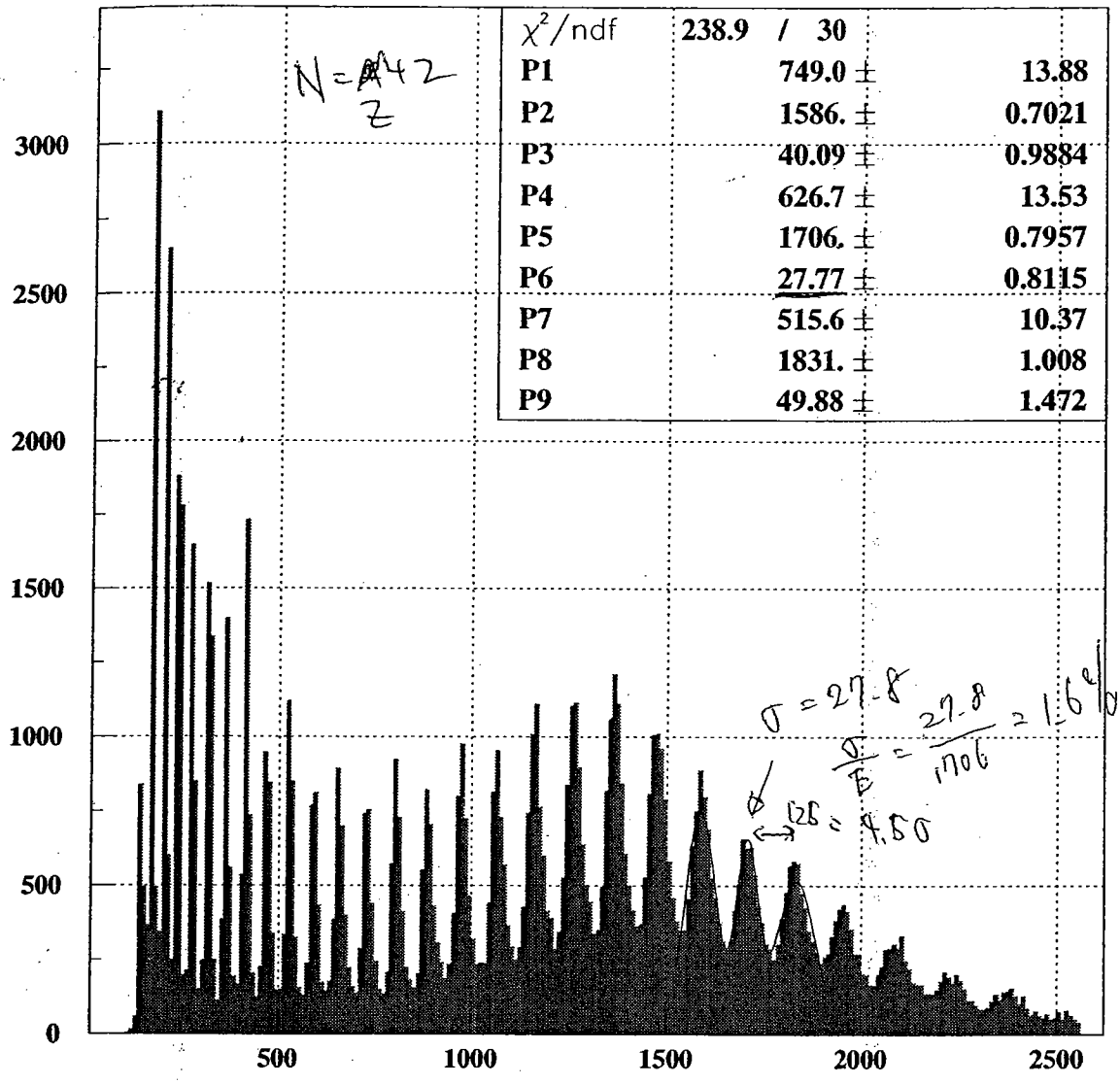
11db for all channels.

Momota

Momata's thre, 66mV.!

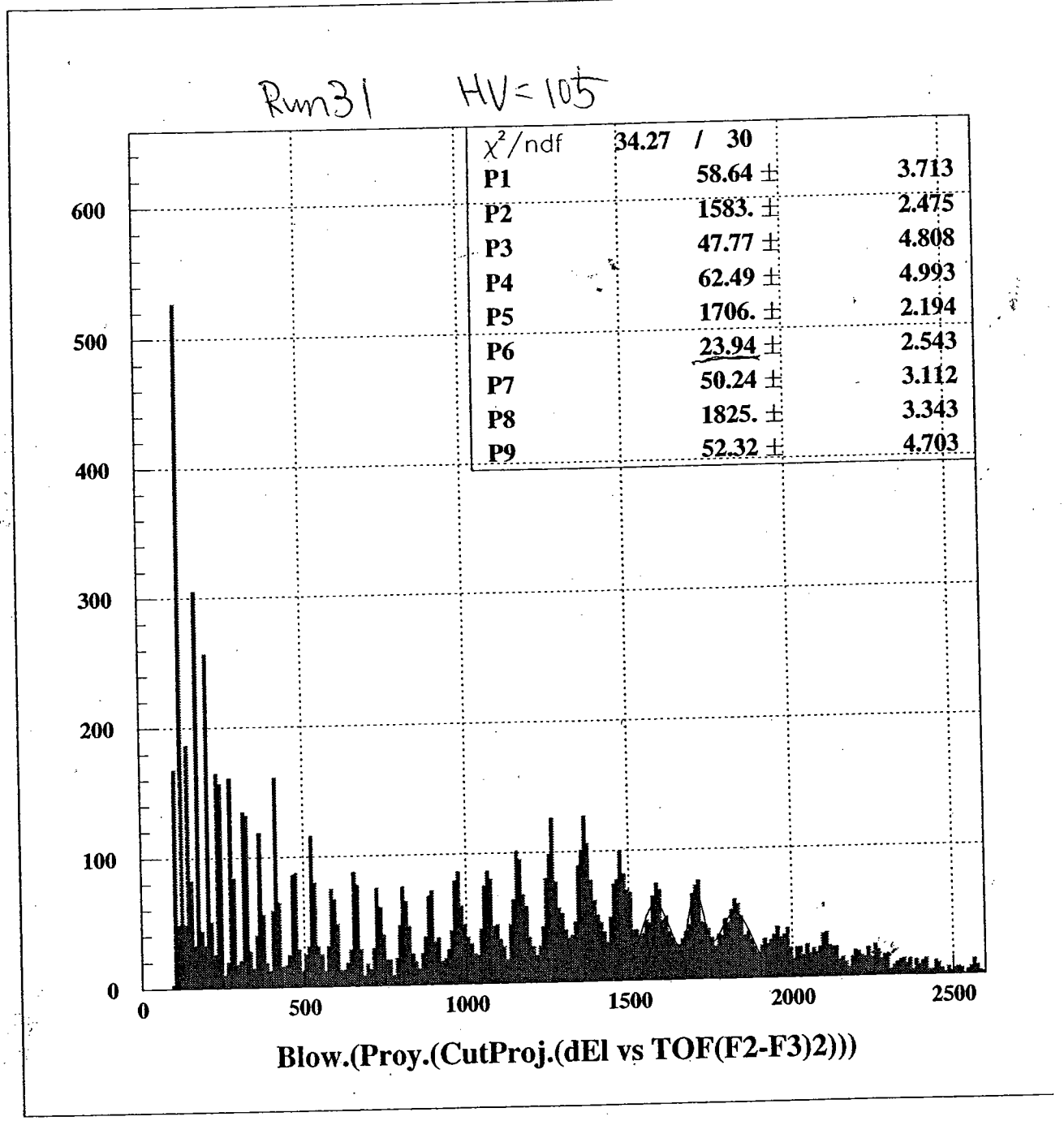


Run 30 HV = 95V



Proy.(CutProj.(XYBlow.(dEl vs TOF(F2-F3)2)))

Lit - 9+1/


Run31 HV=105
χ²/ndf 34.27 / 30
P1 58.64 ± 3.713
P2 1583. ± 2.475
P3 47.77 ± 4.808
P4 62.49 ± 4.993
P5 1706. ± 2.194
P6 23.94 ± 2.543
P7 50.24 ± 3.112
P8 1825. ± 3.343
P9 52.32 ± 4.703
600
500
400
300
200
100
0
0
500
1000
1500
2000
2500
Blow.(Proy.(CutProj.(dEl vs TOF(F2-F3)2)))

6/4 PM 6=10.

Brho 1=2=3=2.4 T~~mmm~~m.

Att. RRC $\frac{1}{10}$ LINAC $\frac{1}{100}, \frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

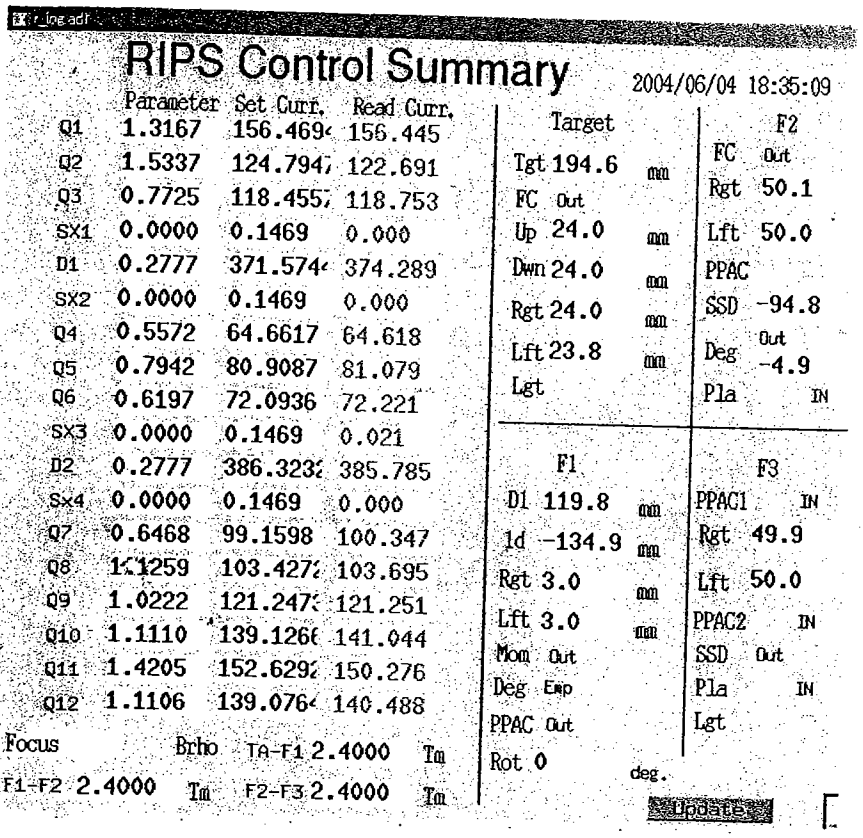
Ion source slit open!
full.

6/4 PM6=10.

Brho 1=2=3 = 2.4 T m.

Att, RRC $\frac{1}{10}$ LINAC $\frac{1}{100}, \frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

Ion souce slit open!
full.



RIPS Control Summary

2004/06/04 18:35:09

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	156.469	156.445
Q2	1.5337	124.794	122.691
Q3	0.7725	118.455	118.753
SX1	0.0000	0.1469	0.000
D1	0.2777	371.574	374.289
SX2	0.0000	0.1469	0.000
Q4	0.5572	64.6617	64.618
Q5	0.7942	80.9087	81.079
Q6	0.6197	72.0936	72.221
SX3	0.0000	0.1469	0.021
D2	0.2777	386.323	385.785
Sx4	0.0000	0.1469	0.000
Q7	0.6468	99.1598	100.347
Q8	1.1259	103.427	103.695
Q9	1.0222	121.247	121.251
Q10	1.1110	139.126	141.044
Q11	1.4205	152.629	150.276
Q12	1.1106	139.076	140.488

Focus Brho TA-F1 2.4000 Tm

F1-F2 2.4000 Tm F2-F3 2.4000 Tm

Target

Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F2

FC Out
Rgt 50.1
Lft 50.0
PPAC
SSD -94.8
Deg Out -4.9
Pla IN

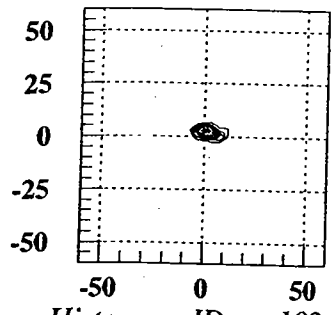
F1

D1 119.8 mm
Id -134.9 mm
Rgt 3.0 mm
Lft 3.0 mm
Mom Out
Deg Exp
PPAC Out
Rot 0 deg.

F3

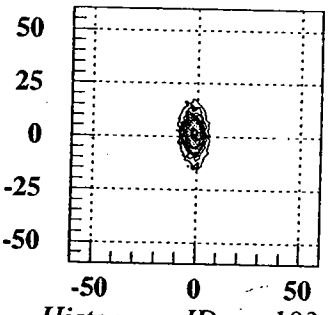
PPAC1 IN
Rgt 49.9
Lft 50.0
PPAC2 IN
SSD Out
Pla IN
Lgt

Update



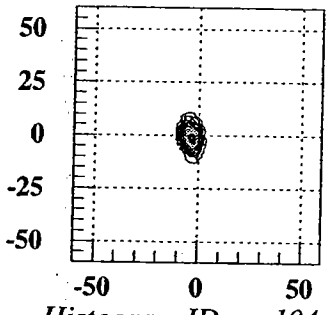
Histogram ID = 102

F2PPAC μμ



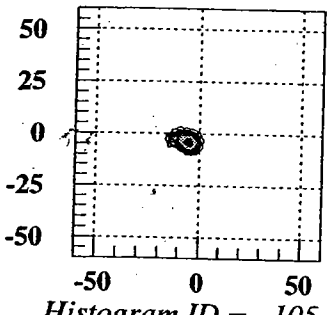
Histogram ID = 103

F3aPPAC μμ



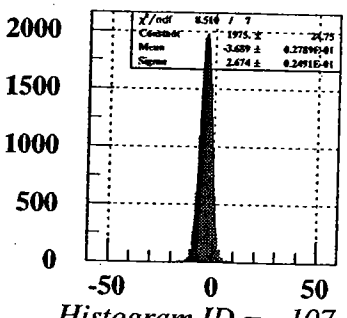
Histogram ID = 104

F3bPPAC μμ



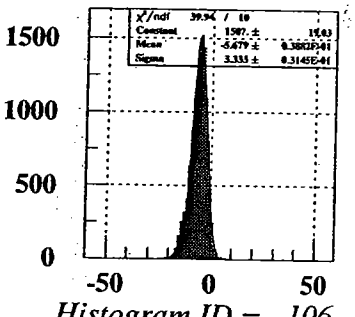
Histogram ID = 105

beamSSD μμ



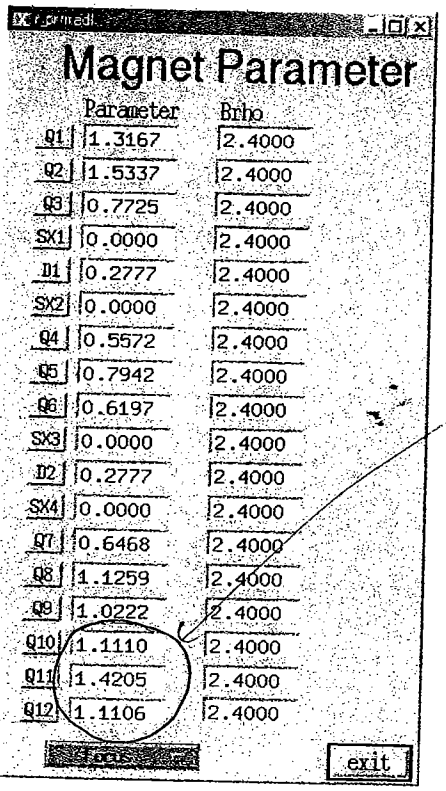
Histogram ID = 107

Proy.(beamSSD μμ)



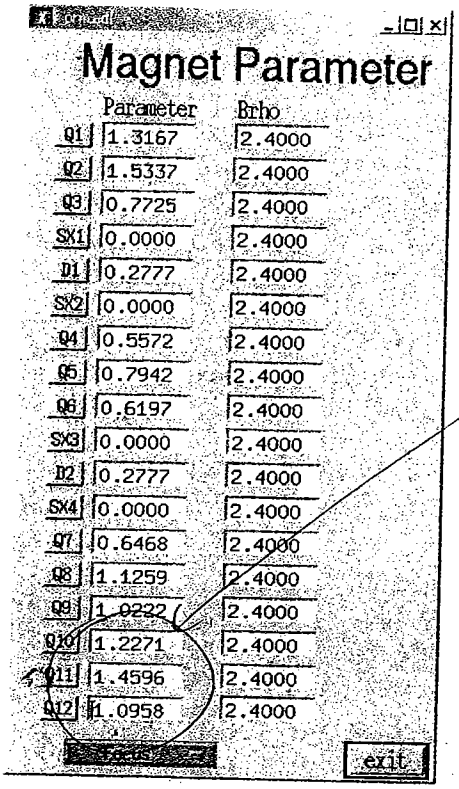
Histogram ID = 106

Prox.(beamSSD μμ)



Before

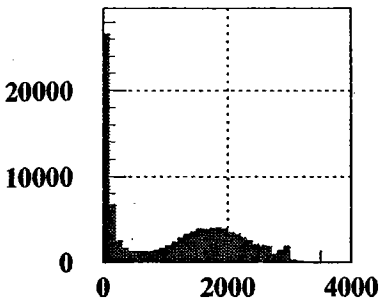
Parameter of TQ.



Change parameter of TQ. (Q10~12).

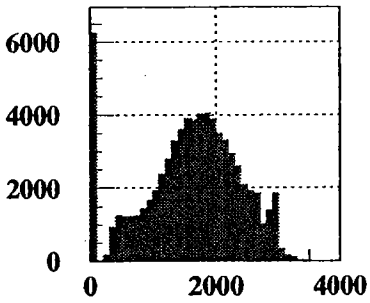
focus @ Si-stack.

(See RIPS log note P.179 (2004/4/5~6/4)



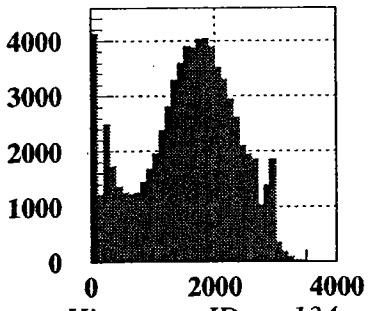
Histogram ID = 132

dEl for PPAC eff



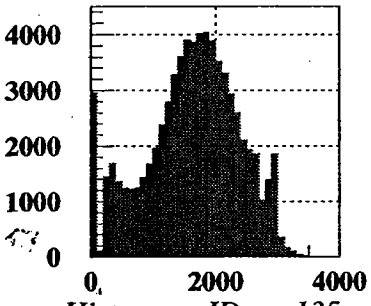
Histogram ID = 133

dEl f2G



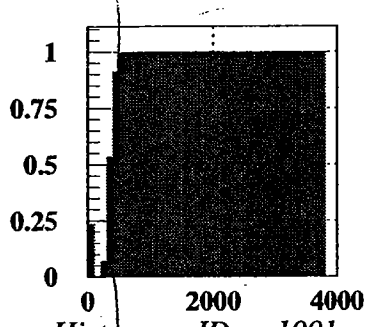
Histogram ID = 134

dEl f3ag



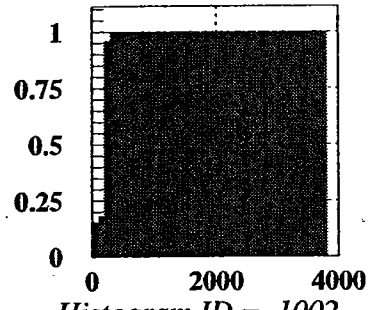
Histogram ID = 135

dEl f3bg



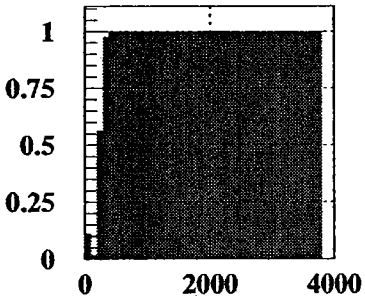
Histogram ID = 1001

dEl f2G



Histogram ID = 1002

dEl f3ag

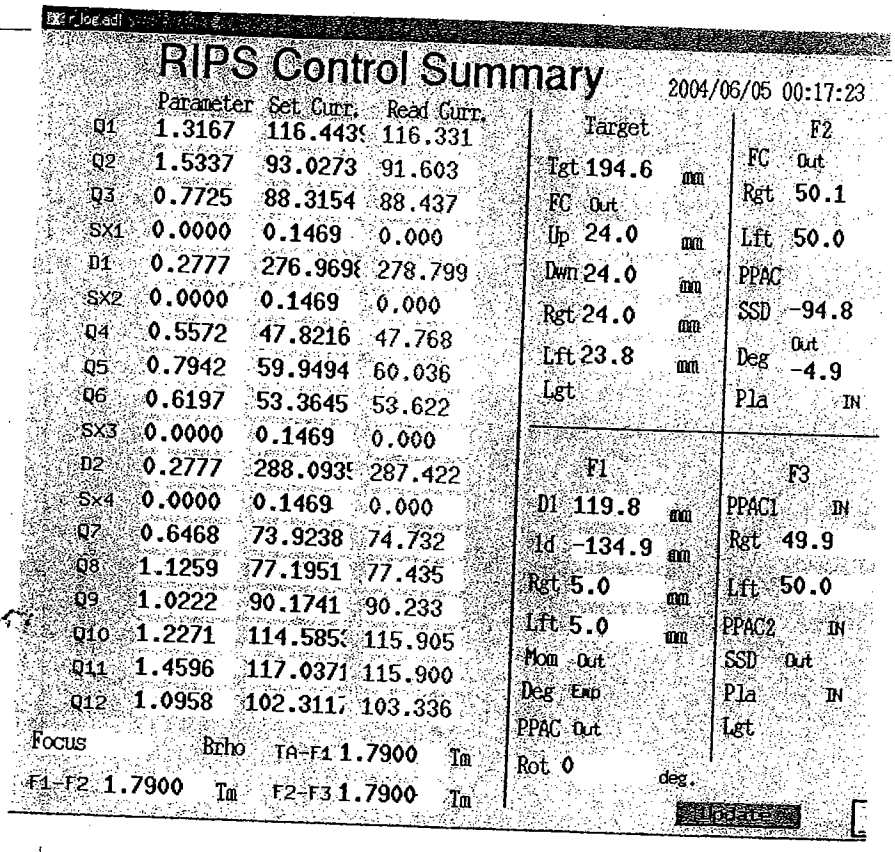


Histogram ID = 1003

dEl f3bg

Eff =100 % > 500 ch (Si Z~14)

PPAC eff w/ rough bin analysis.



RIPS Control Summary

2004/06/05 00:17:23

Parameter	Set Curr.	Read Curr.
Q1	1.3167	116.443	116.331
Q2	1.5337	93.0273	91.603
Q3	0.7725	88.3154	88.437
SX1	0.0000	0.1469	0.000
D1	0.2777	276.969	278.799
SX2	0.0000	0.1469	0.000
Q4	0.5572	47.8216	47.768
Q5	0.7942	59.9494	60.036
Q6	0.6197	53.3645	53.622
SX3	0.0000	0.1469	0.000
D2	0.2777	288.093	287.422
Sx4	0.0000	0.1469	0.000
Q7	0.6468	73.9238	74.732
Q8	1.1259	77.1951	77.435
Q9	1.0222	90.1741	90.233
Q10	1.2271	114.585	115.905
Q11	1.4596	117.037	115.900
Q12	1.0958	102.311	103.336

Focus Brho TA-F1 1.7900 Tm

F1-F2 1.7900 Tm F2-F3 1.7900 Tm

Target

Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

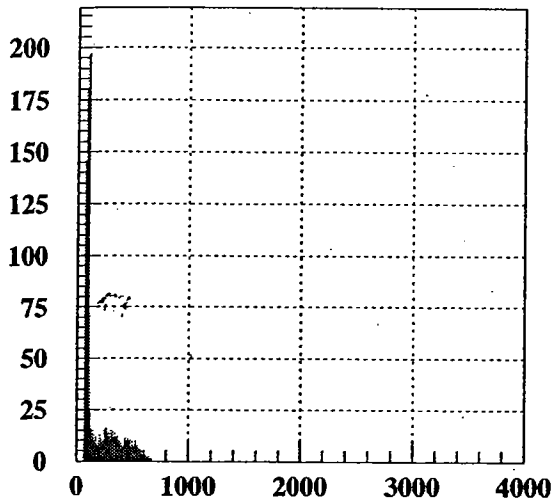
D1 119.8 mm
Id -134.9 mm
Rgt 5.0 mm
Lft 5.0 mm
Mom Out
Deg End
PPAC Out
Rot 0 deg.

F2

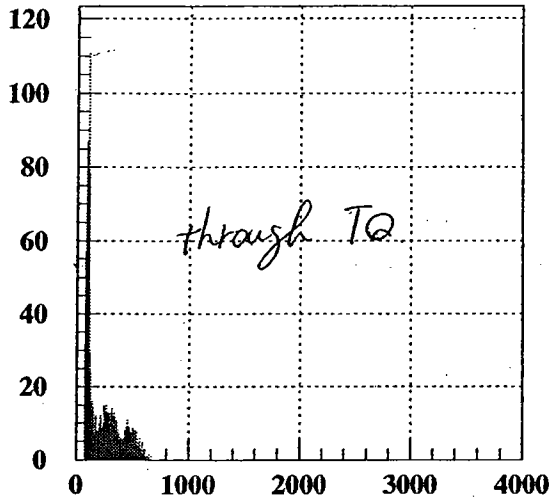
FC Out
Rgt 50.1
Lft 50.0
PPAC
SSD -94.8
Deg Out -4.9
Pla IN

F3

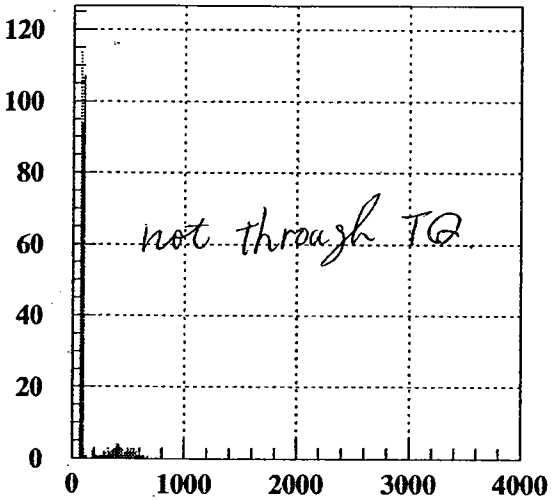
PPAC1 IN
Rgt 49.9
Lft 50.0
PPAC2 IN
SSD Out
Pla IN
Lgt



F2a

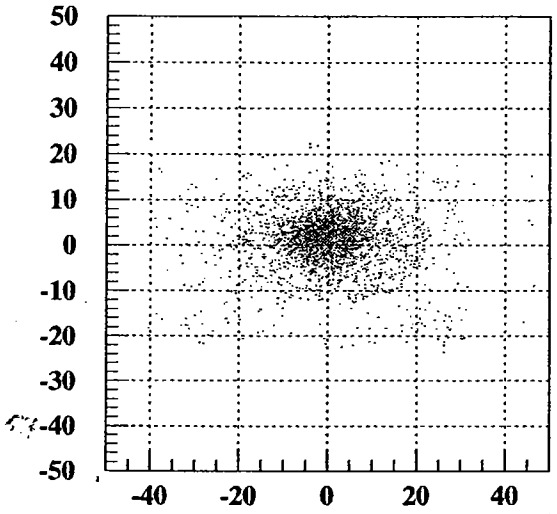


F2aF3



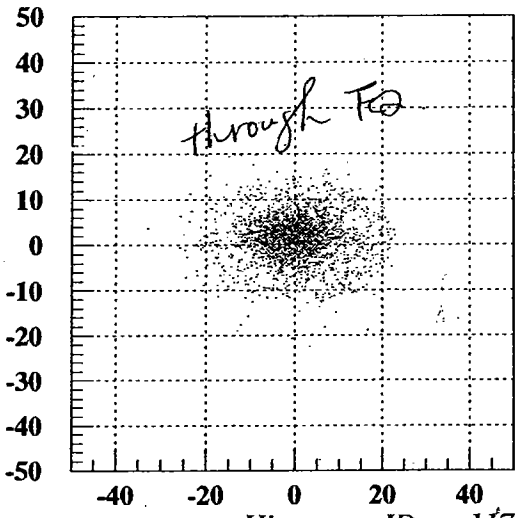
F2a-F3

$\frac{F3}{F2} \approx 80\%$



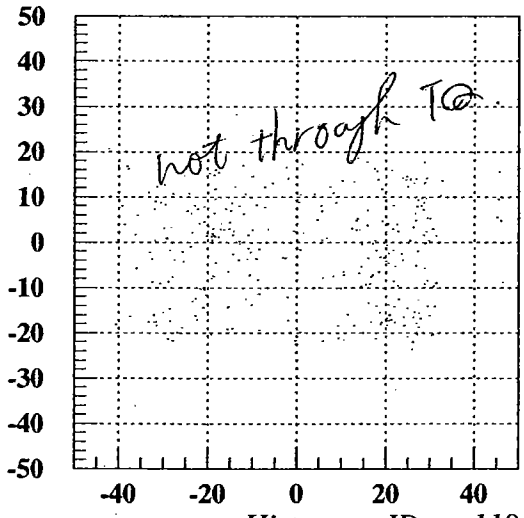
Histogram ID = 116

x*y_pc2



Histogram ID = 117

x*y_pc2F3

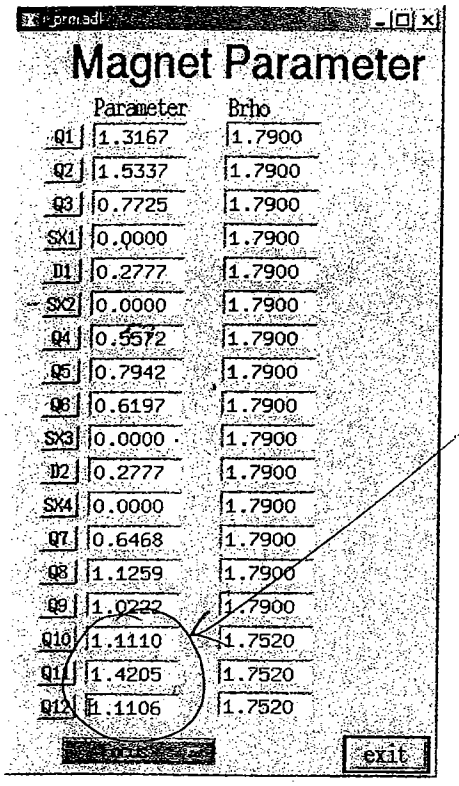


Histogram ID = 118

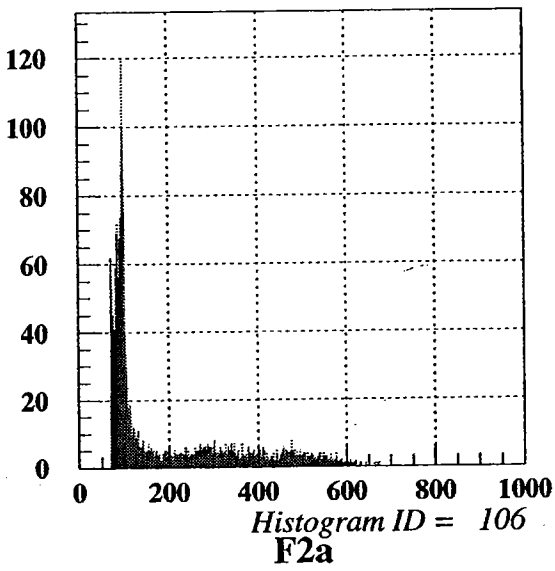
x*y_pc2-F3

change the parameter. of TQ.

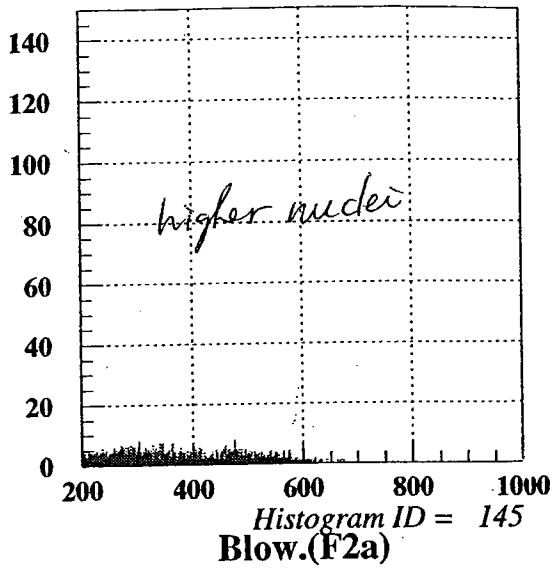
to default parameter.



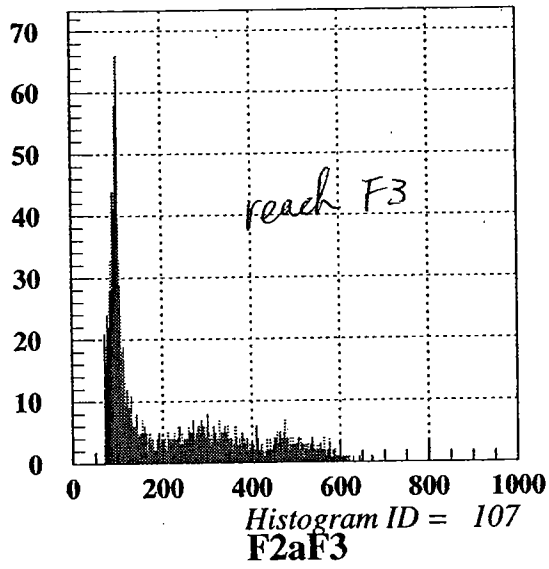
$$\frac{F2}{F3} = 81\%.$$



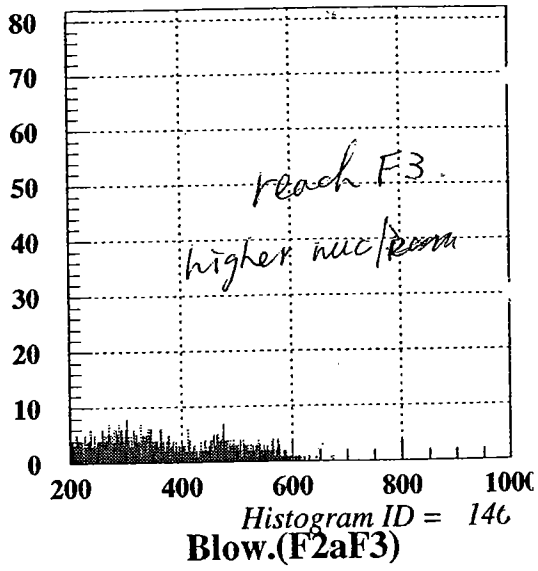
F2a



Blow.(F2a)



F2aF3

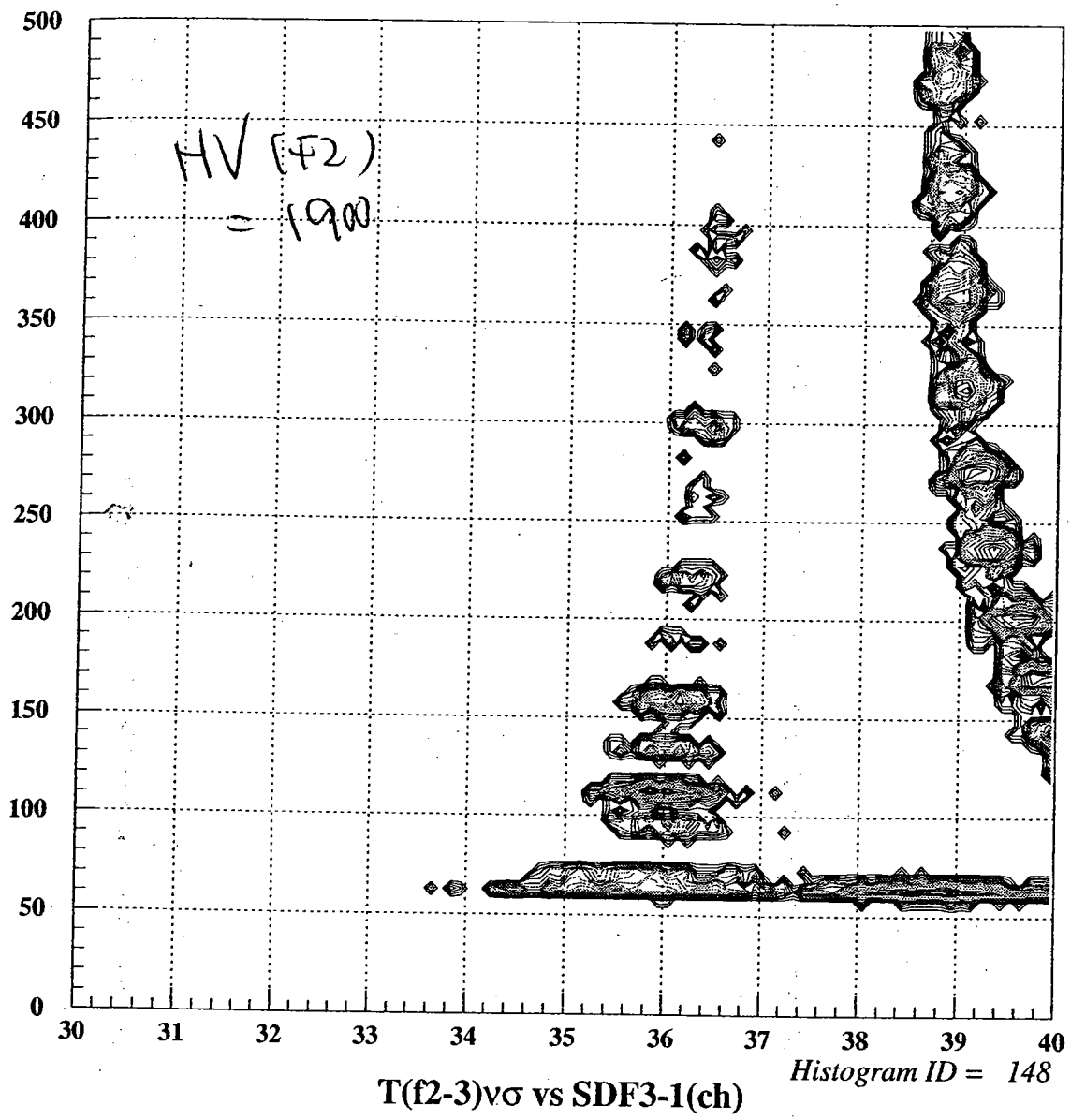


Blow.(F2aF3)

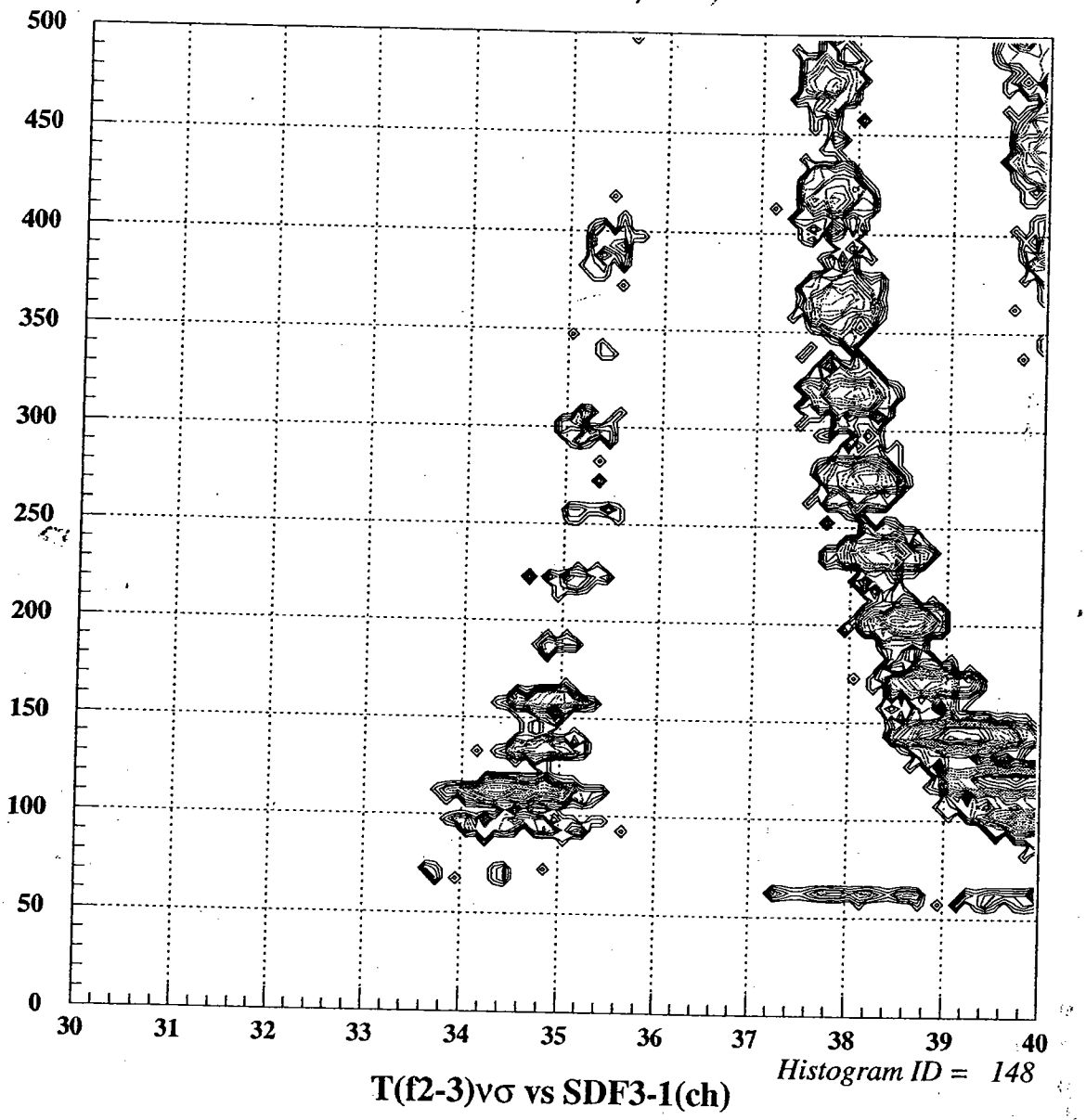
Blow: light nuclei is cut by threthod of F3.

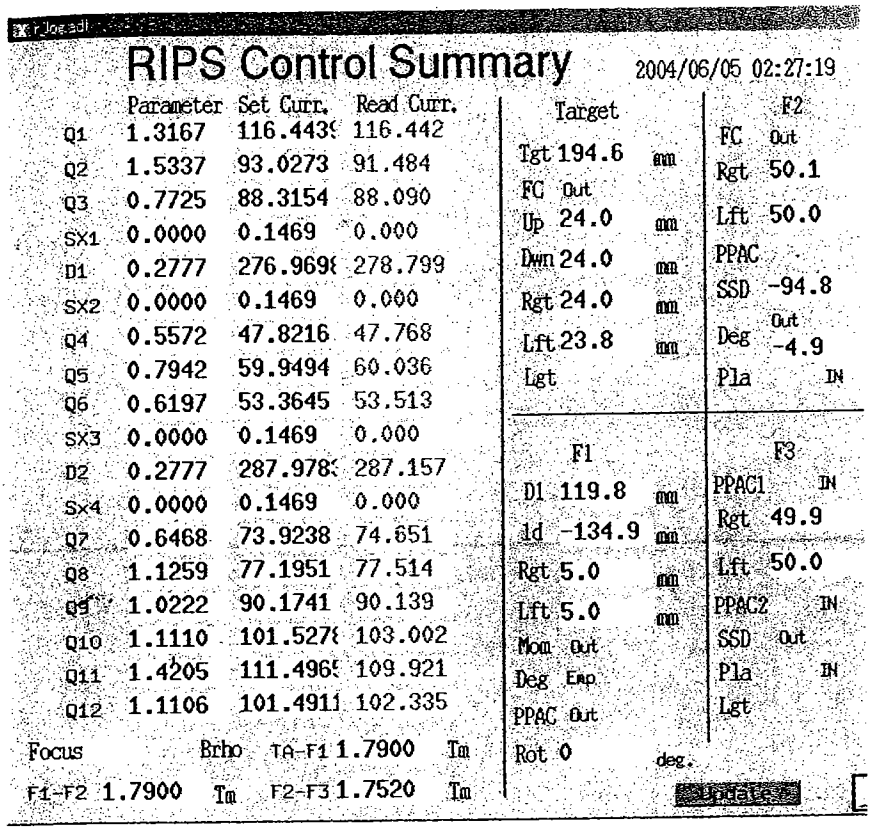
$$\text{Transmission} = \frac{F2A \text{ with reached } F3\ (200\sim1000ch)}{F2_A\ (200\sim1000ch)}$$

$$= 90\%$$


HV (F2)
= 1900
500
450
400
350
300
250
200
150
100
50
0
30
31
32
33
34
35
36
37
38
39
40
Histogram ID = 148
T(f2-3)νσ vs SDF3-1(ch)

HV = 1800 (F2ph)


500
450
400
350
300
250
200
150
100
50
0
30
31
32
33
34
35
36
37
38
39
40
Histogram ID = 148
T(f2-3)νσ vs SDF3-1(ch)



RIPS Control Summary

2004/06/05 02:27:19

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	116.443	116.442
Q2	1.5337	93.0273	91.484
Q3	0.7725	88.3154	88.090
SX1	0.0000	0.1469	0.000
D1	0.2777	276.969	278.799
SX2	0.0000	0.1469	0.000
Q4	0.5572	47.8216	47.768
Q5	0.7942	59.9494	60.036
Q6	0.6197	53.3645	53.513
SX3	0.0000	0.1469	0.000
D2	0.2777	287.978	287.157
Sx4	0.0000	0.1469	0.000
Q7	0.6468	73.9238	74.651
Q8	1.1259	77.1951	77.514
Q9	1.0222	90.1741	90.139
Q10	1.1110	101.527	103.002
Q11	1.4205	111.496	109.921
Q12	1.1106	101.491	102.335

Focus Brho TA-F1 1.7900 Tm

F1-F2 1.7900 Tm F2-F3 1.7520 Tm

Target

Tgt 194.6 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

D1 119.8 mm
Id -134.9 mm
Rgt 5.0 mm
Lft 5.0 mm
Mom Out
Deg Exp
PPAC Out
Rot 0 deg.

Update

F2

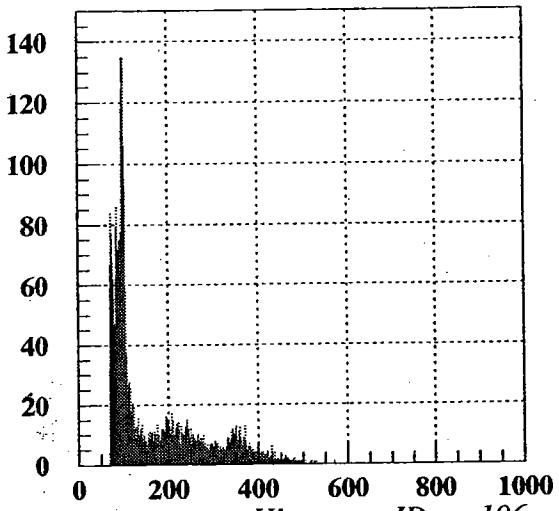
FC Out
Rgt 50.1
Lft 50.0
PPAC
SSD -94.8
Out
Deg -4.9
Pla IN

F3

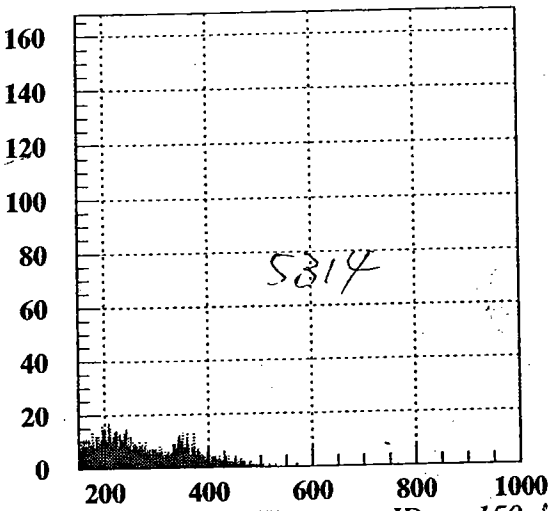
PPAC1 IN
Rgt 49.9
Lft 50.0
PPAC2 IN
SSD Out
Pla IN
Lgt

D1 = 498.097(mT)
D2 = 498.244(mT)

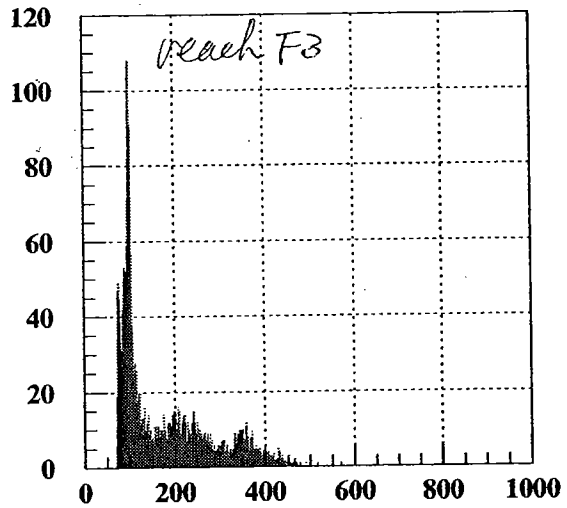
Start!!



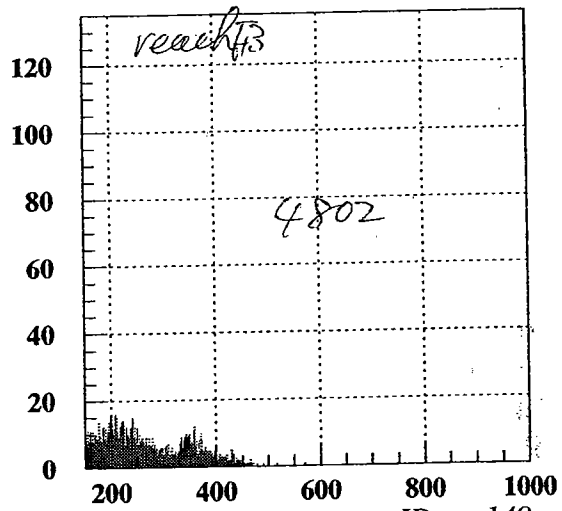
F2a



Blow.(F2a)



F2aF3

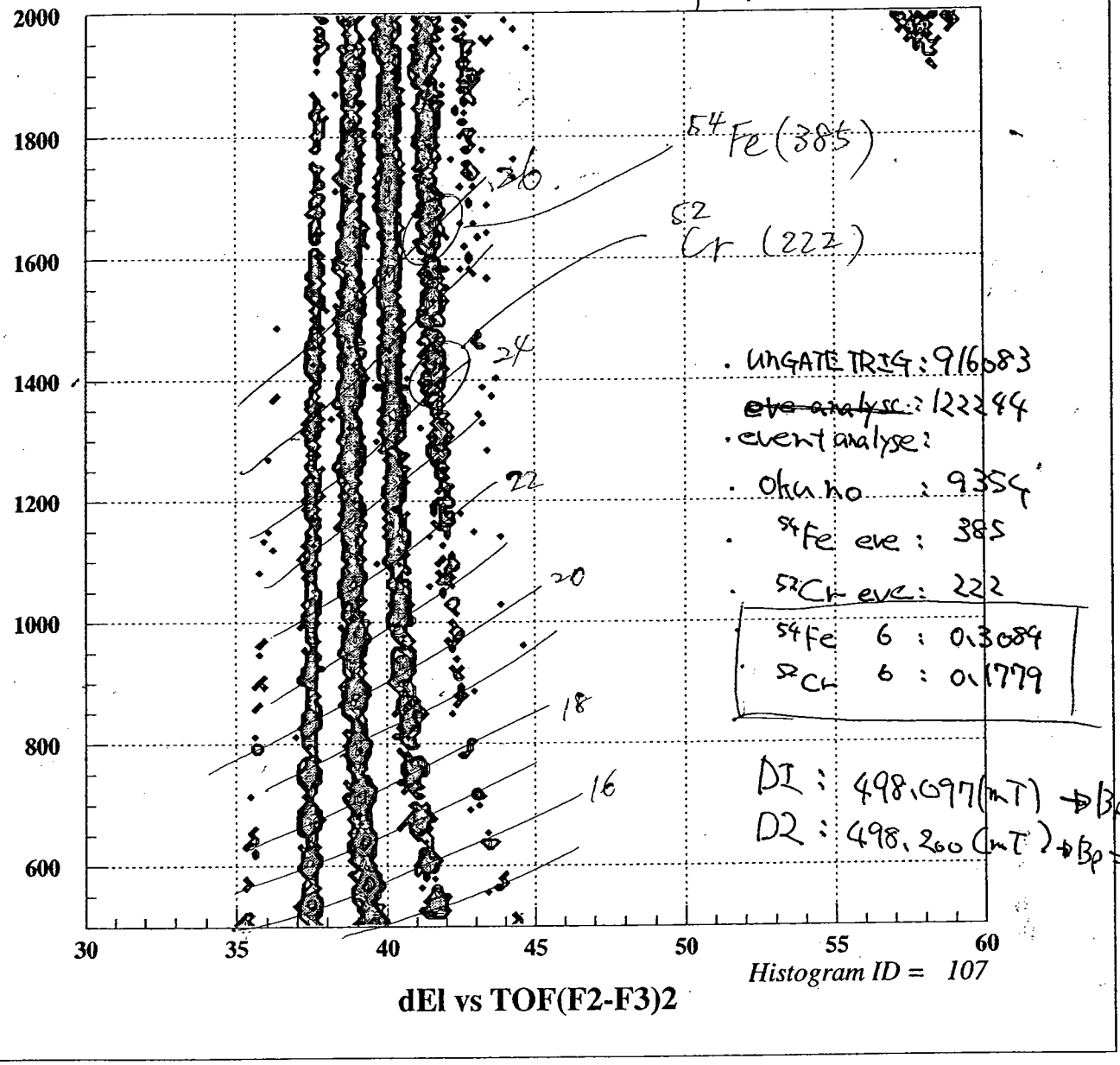


Blow.(F2aF3)

$$\text{transmission} = \frac{F3}{F2} = 90.4\%$$

Run 78 Be tgt (0.5mmt) Brho=1.179

event. 122244



- UnGATE TRIG : 916683
- ~~eve analyse~~ : 122244
- event analyse :
- Okuno : 9354
- ^{54}Fe eve : 385
- ^{52}Cr eve : 222

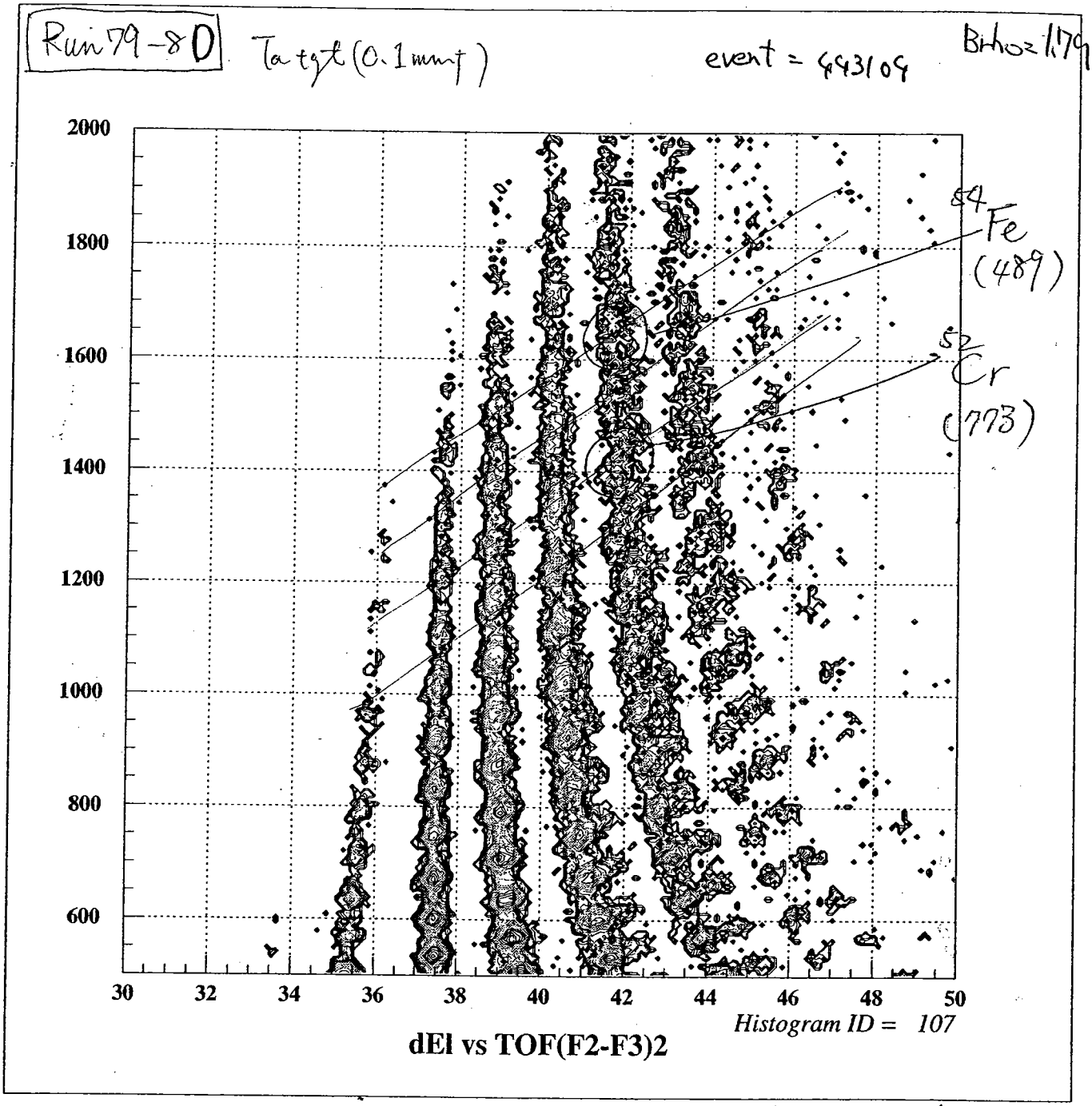
^{54}Fe	6	: 0.3084
^{52}Cr	6	: 0.1779

D1 : 498.097(mT) → Bρ = 1.1928

D2 : 498.260(mT) → Bρ = 1.1928

ex. $\dfrac{\#^{54}\text{Fe} \times \frac{\#\text{UnGATE TRIG}}{\#\text{event analyse}}}{\#\text{Okuno}} = 6$

Run 79-80 Target (0.1mmt) event = 443109 Brho=1.179



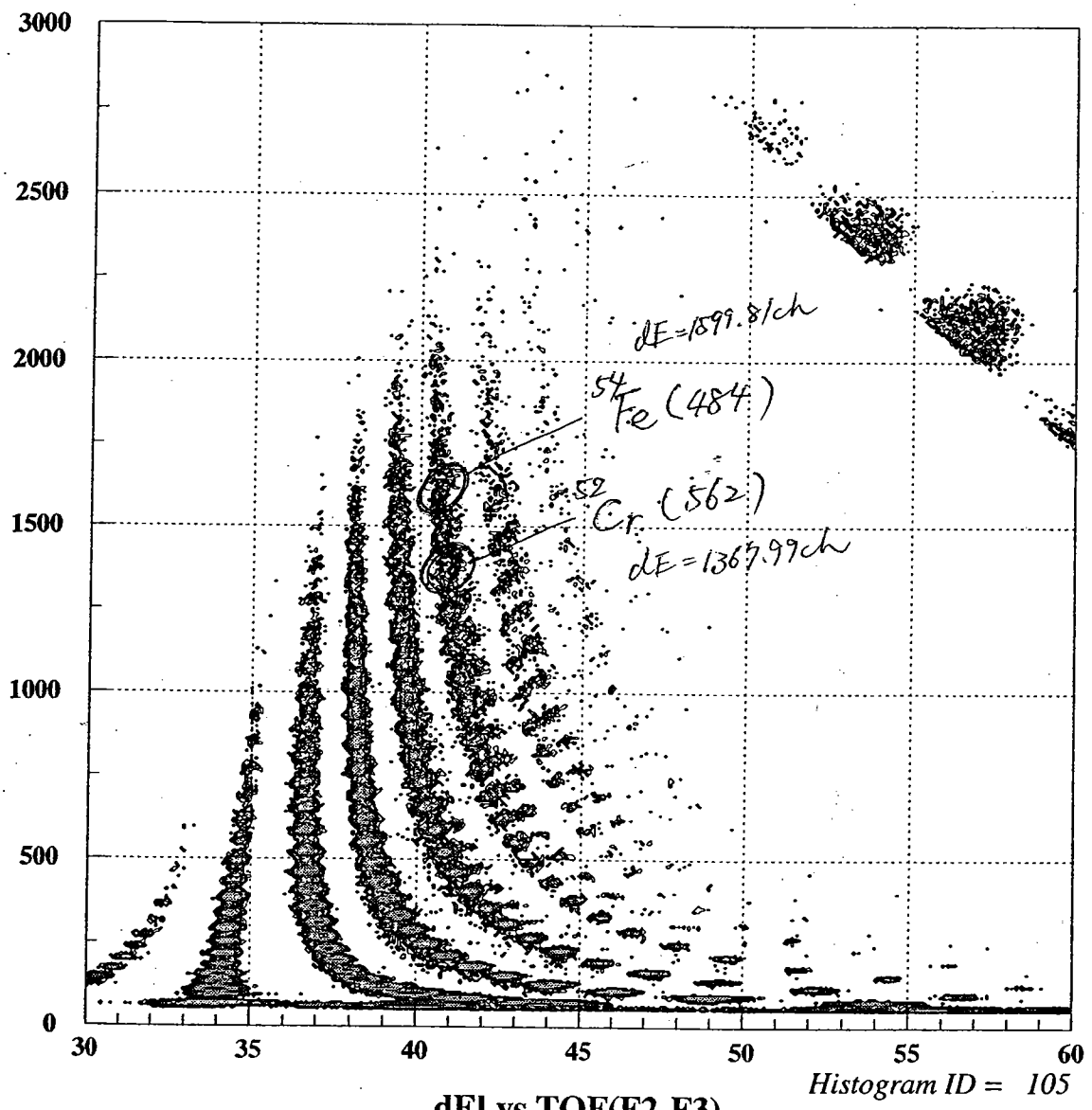
	Run 79	Run 80	total
UNGATE :	299330	574108	873438
olruno :	9173	18012	27185
^{54}Fe :			489
^{52}Cr :			773
event :			443164

	Run 79	Run 80
D1 =	498.096 Bρ = 1.7928	498.096 Bρ = 1.7928
D2 =	498.232 Bρ = 1.7928	498.232 Bρ = 1.7928

^{54}Fe δ : 0.0354573222

^{52}Cr δ : 0.0560501228 2

Run81 # 273769 Ta tgt (0.1 mmt) Brho 1.81



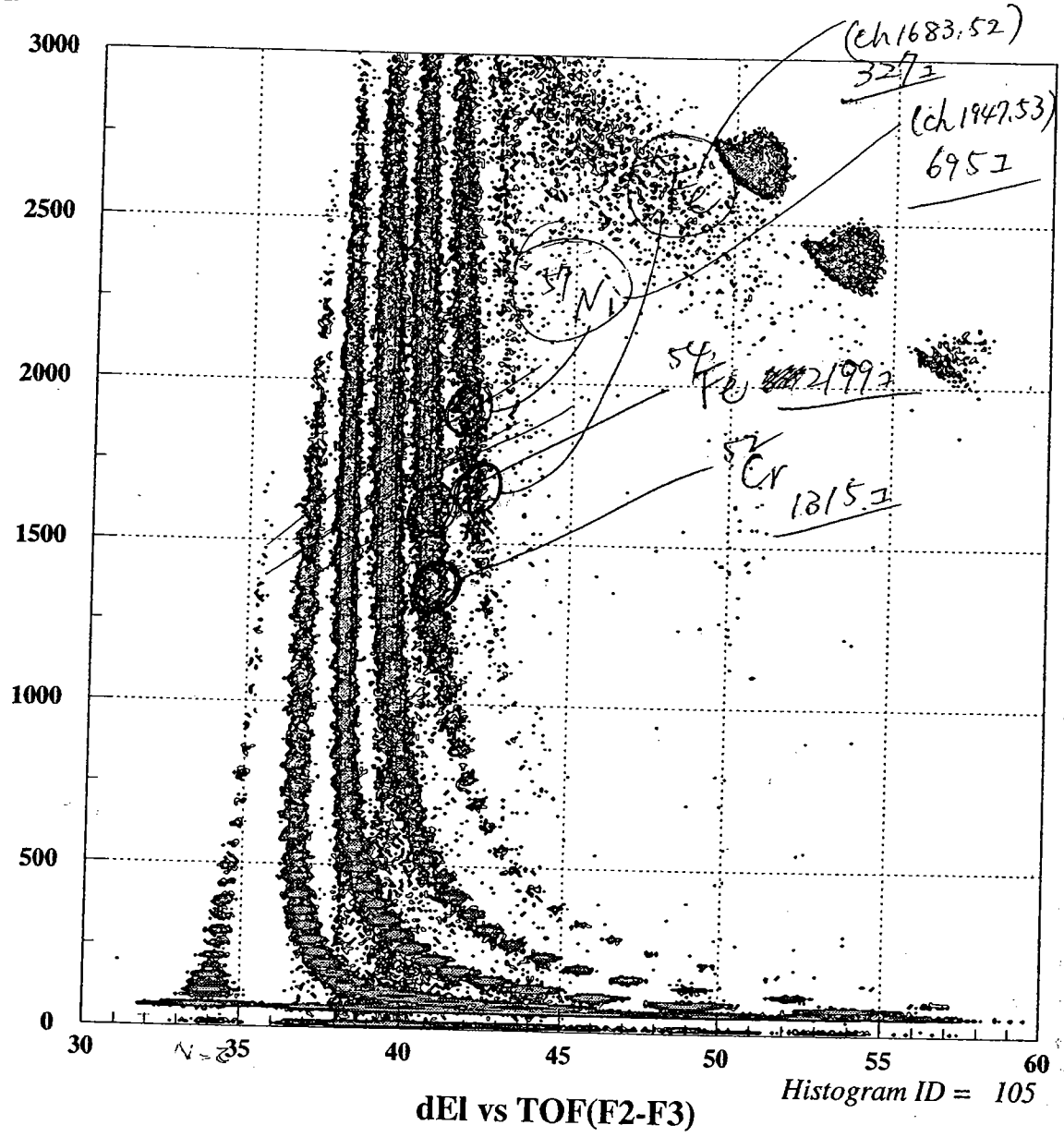
UnG : 872298
dtuno : 25655
event : 273769
^{54}Fe : 484
^{52}Cr : 562

D1 : 503.655 → Bρ = 1.8108 (Tm)
D2 : 503.997 → Bρ = 1.8108 (Tm)

^{54}Fe σ : 0.069798
^{52}Cr σ : 0.060111

97

RUN 82 | #368806 Be tgt (0.5mm) BHo 1.81



D1 503.655 (mT) → BHo D1 · ~~1833~~ 1814 (Tm)

D2 504.029 (mT) → BHo D2 ~~1834~~ (Tm) 1,814

UNG: 120770

ofm: 11206

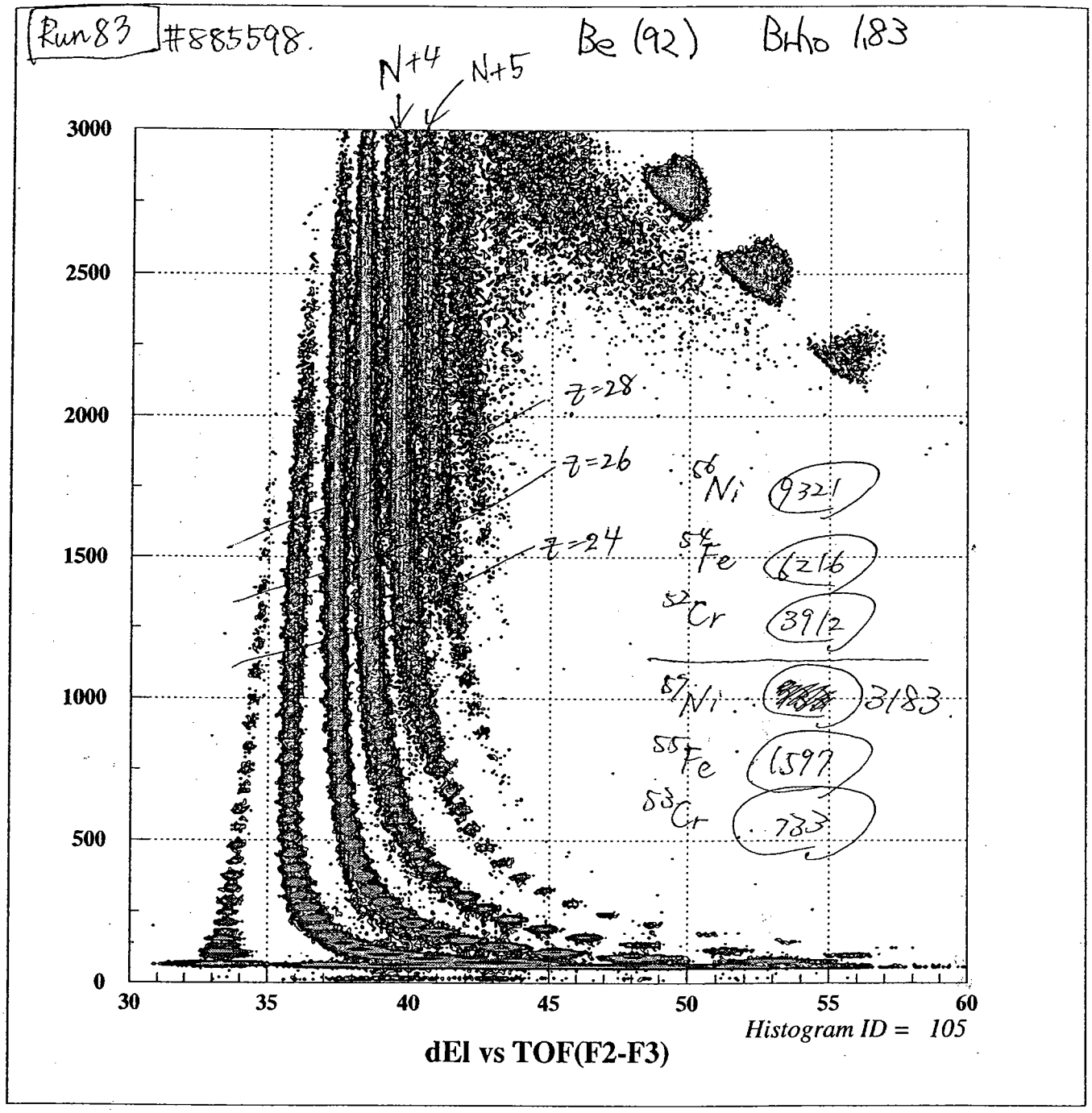
event: 368806

^{52}Cr : 1315 (count) → σ = 0.384282

^{54}Fe : 2199 (") → σ = 0.384282

^{55}Fe : 327 (") → σ = 0.095559

^{57}Ni : 695 (") → σ = 0.20311

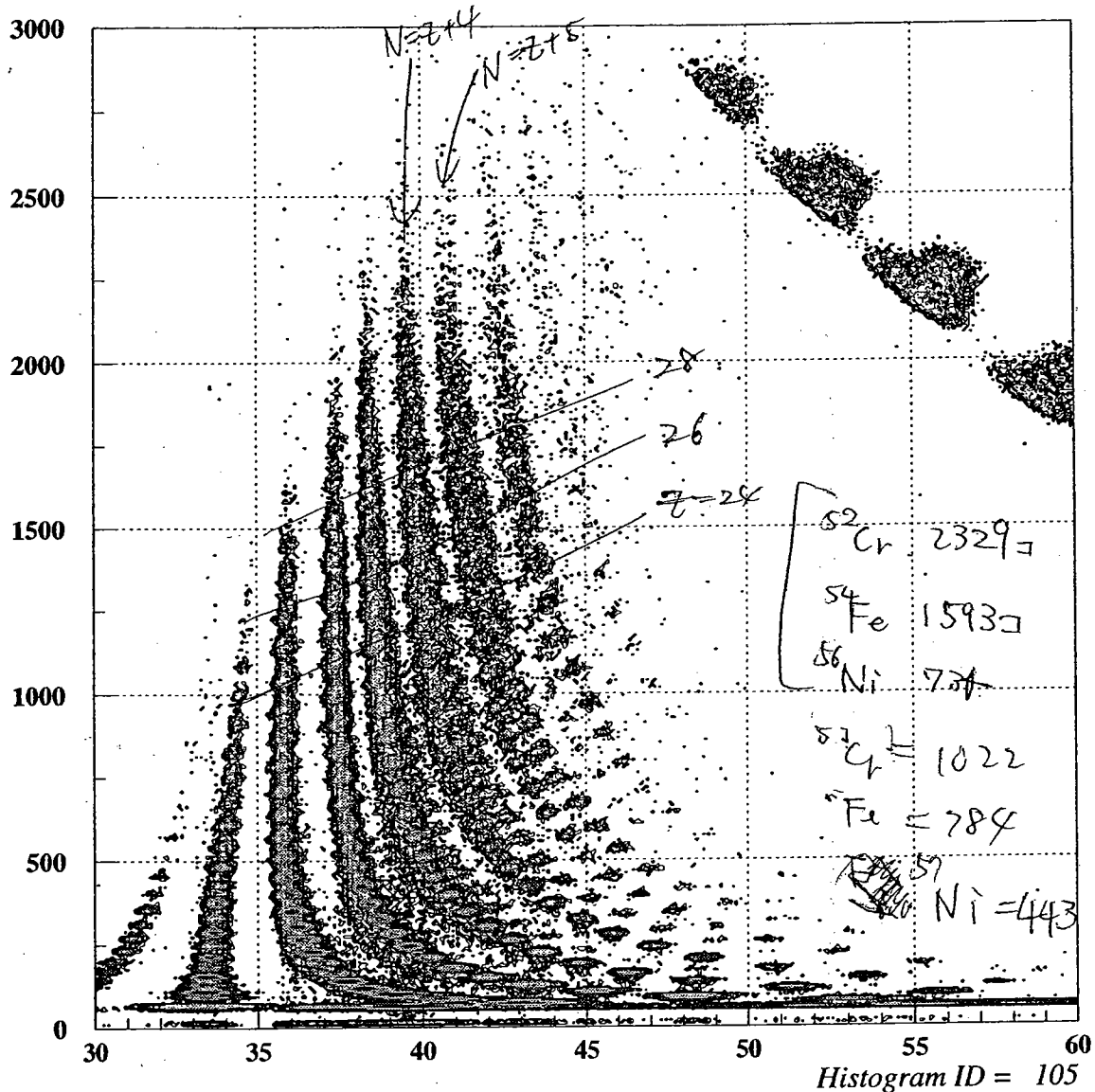


D1 : 509.207 → BHo = 1833 (Tm)
D2 : 509.497 → BHo = 1834 (Tm)

ING : 1298011
IRUNO : ~~95283~~ ← 9907
Ient : 885598

^{52}Cr : 3912 → σ = 0.006022
^{53}Cr : 733 → σ = 0.001128
^{54}Fe : 6216 → σ = ~~0.002458~~ 0.009568
^{55}Fe : 1597 → σ = ~~0.014348~~ 0.002458
^{56}Ni : 9321 → σ = 0.014348
^{57}Ni : 3183 → σ = 0.0049

Run84 # 836676 Ta(166) Bho 1.83



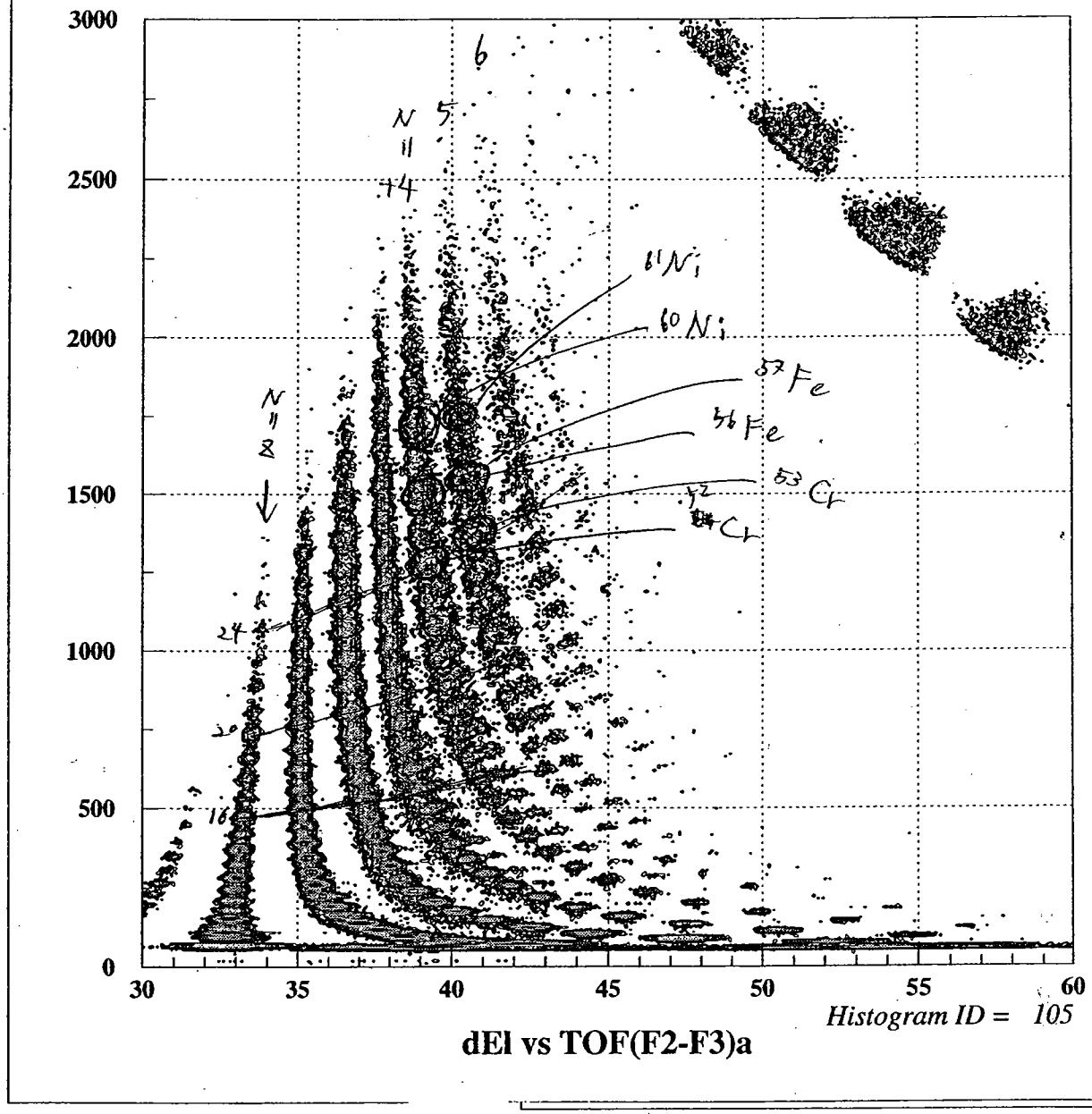
D1 : 509.209 → 1.833 (Tm)
D2 : 509.457 → 1.833 (Tm)
unG : 1144457
dtuno : 30263
event : 836676

^{52}Cr : 2329 (count) → 0.105269
^{53}Cr : 1022 (") → 0.046194
^{54}Fe : 1593 (") → 0.072002
^{55}Fe : 784 (") → 0.035436
^{56}Ni : 734 (") → 0.033176
^{57}Ni : 443 (") → 0.020023

Run85 is junk data.

100

Run 86 Ta (166) Brho 1.85

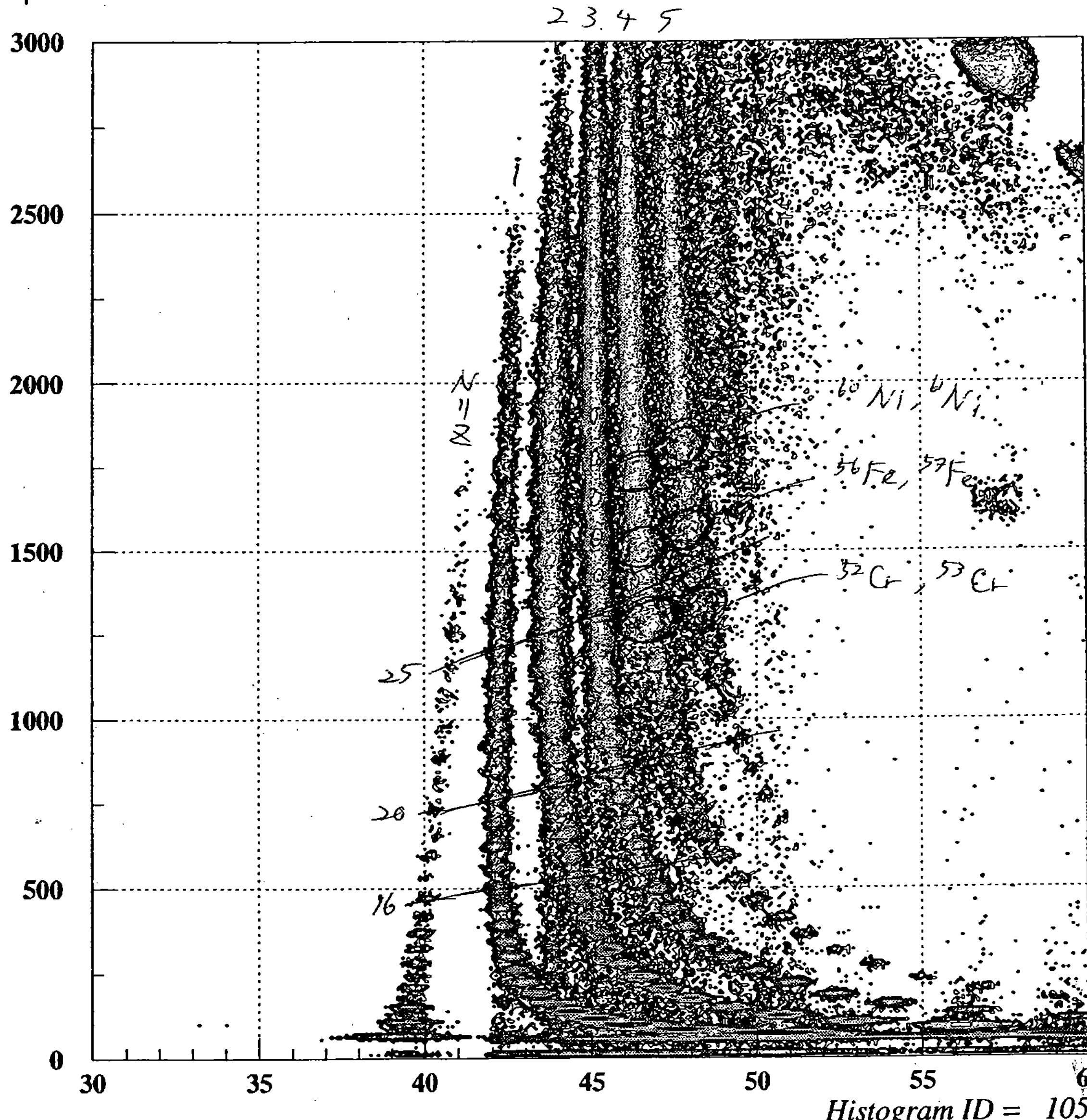


D1	514,742	neg	
D2	514,990	1407901	
neg	1407901	okuno	
okuno	33869	33869	
event			

^{52}Cr	2053	⇒	0.1638 ~~193~~
^{53}Cr	1297	⇒	0.1035
^{56}Fe	1669	⇒	0.1331
^{57}Fe	~~1070~~ 868	⇒	0.06926
^{60}Ni	825	⇒	0.06583
^{61}Ni	571	⇒	0.04556

all --- 520940

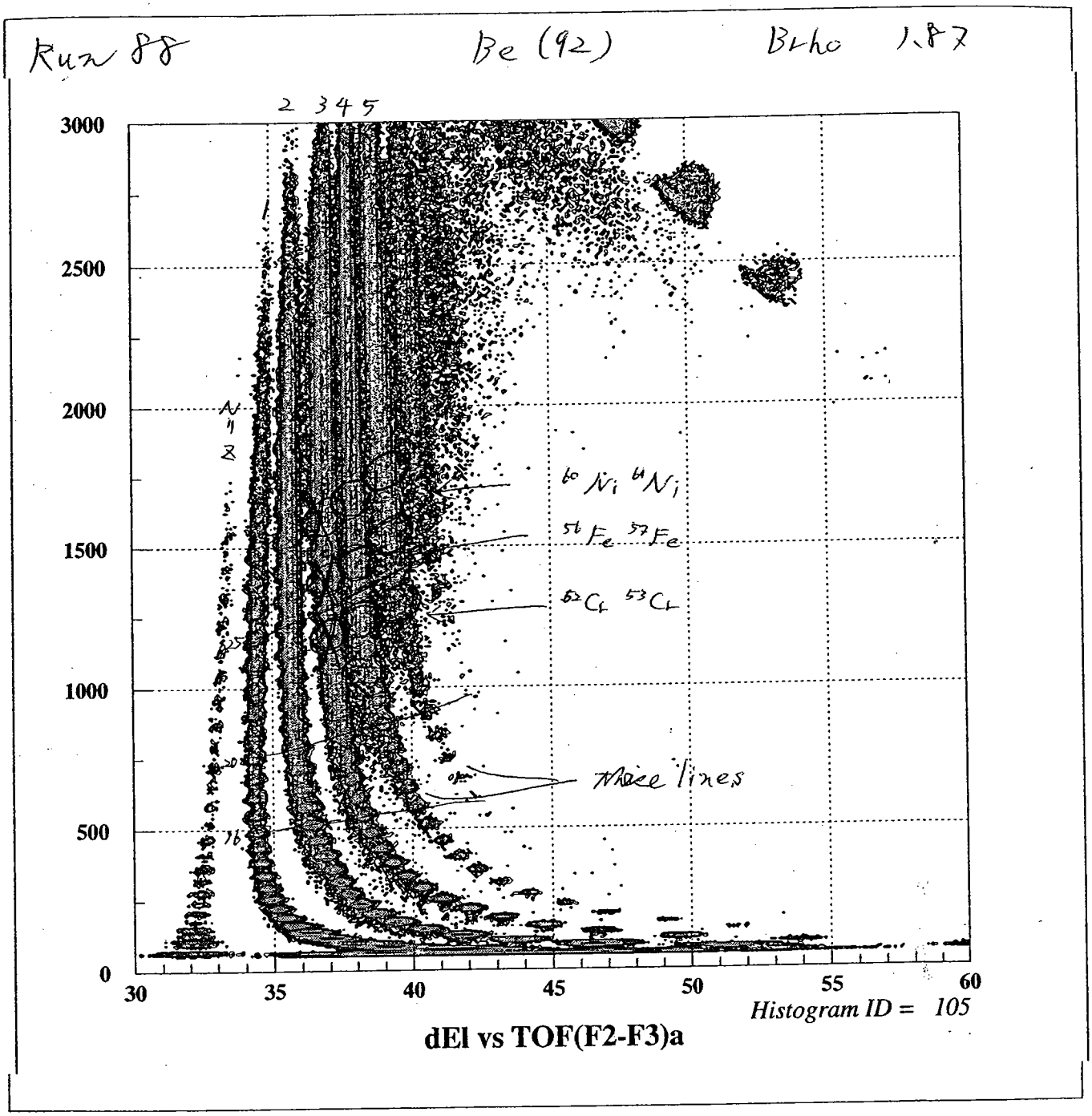
Run 87 Be(92) Bρ = 1.85



dEl vs TOF(F2-F3)a

D1 = 514.743
D2 = 514.965
ung 1234095
okuno 9473
event

^{52}Cr	6167	⇒ 10781
^{53}Cr	1312	
^{56}Fe	10509	
^{57}Fe	2625	
^{60}Ni	17205	
^{61}Ni	4816	
all event	944646	



D1 520.242 mT → 1.87 Tm

D2 520.510 mT → 1.87 Tm

unx 1292289

0|chro 7941

event

^{52}Cr : 8725 ⇒ 1.105

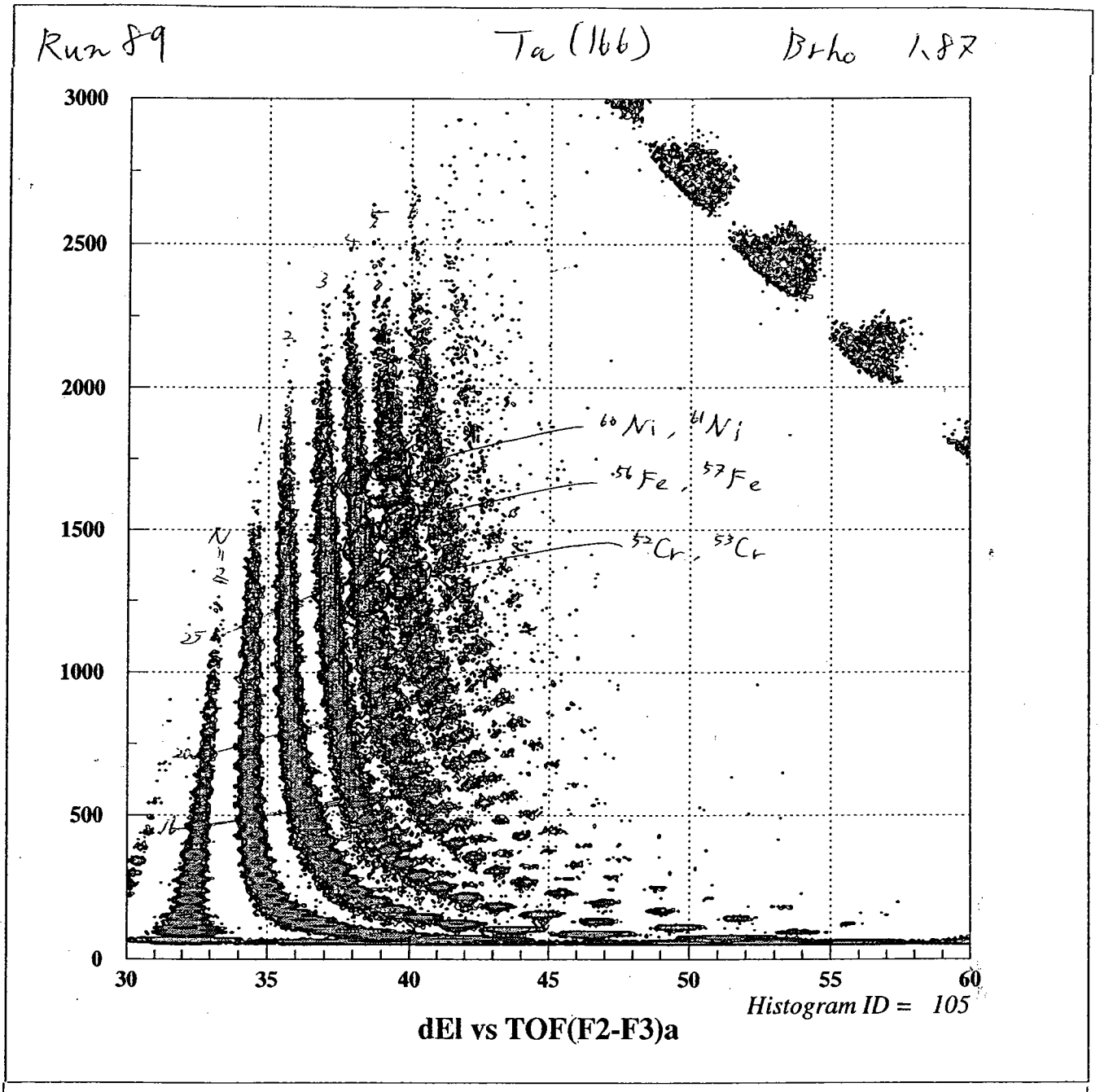
^{53}Cr : 1849 ⇒ 0.2342

^{56}Fe : 17044 ⇒ 2.159

^{57}Fe : 4944 ⇒ 0.626

^{60}Ni : 28327 ⇒ 3.587

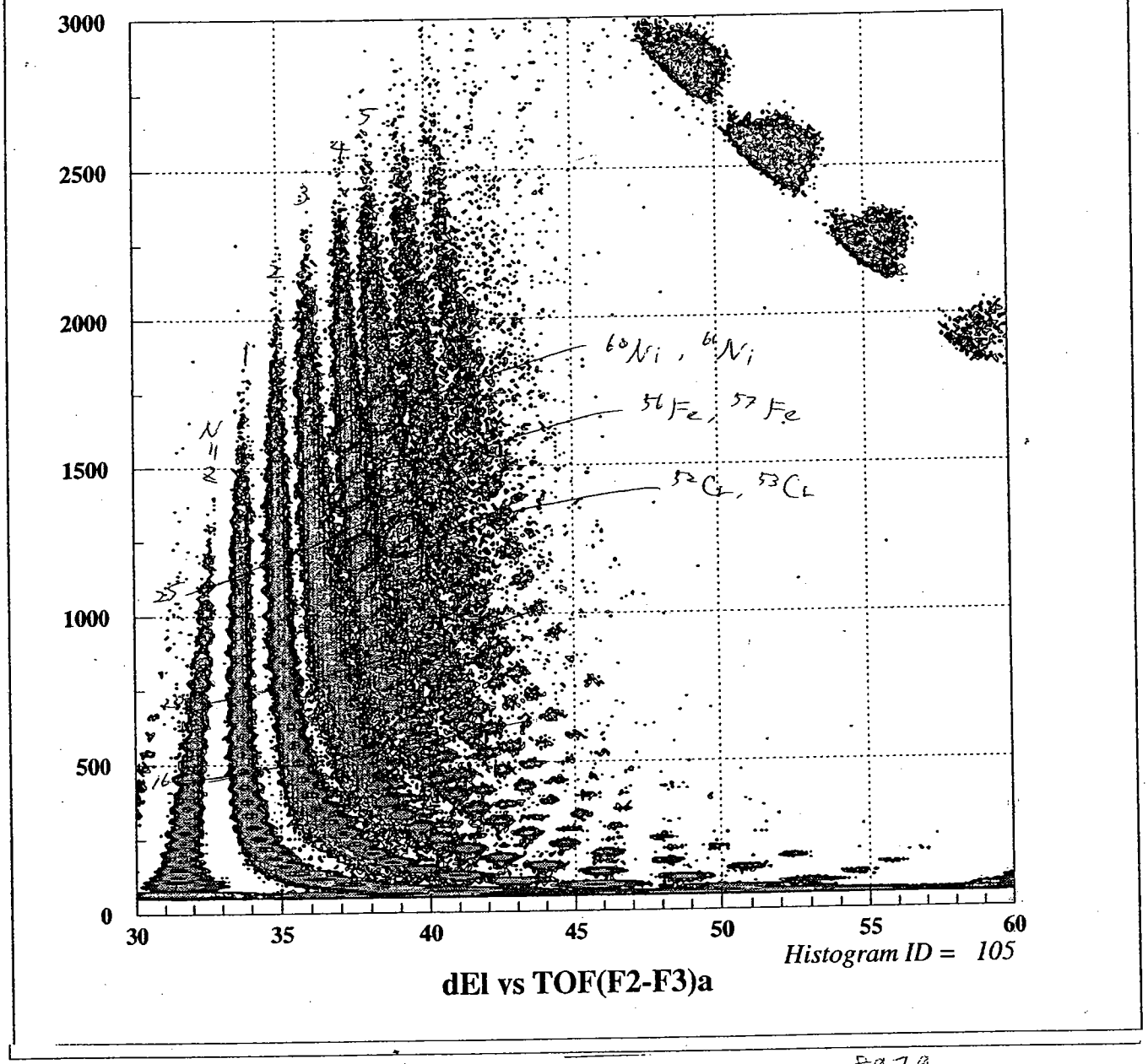
^{61}Ni : 9790 ⇒ 1.24



D1 520.241mT → ,
D2 520.504mT → ;
ung 987171
okuno 20880
event

52Cr : 3406 ⇒ 0.2374
53Cr : 1810 ⇒ 0.1262
56Fe : 2718 ⇒ 0.189
57Fe : 1603 ⇒ 0.112
60Ni : 1622 ⇒ 0.1131
61Ni : 722 ⇒ 0.05
all event : 678198 #

Run 90 # 1529880 Ta (166) DLP 1.89



D1 525、769

D2 526、504

unr 2457371

okuro 46145

event

52 Cr : 8979

53 Cr : 5086

56 Fe : 7777

57 Fe : 4130

60 Ni : 4486

61 Ni : 3372

all = 1529880

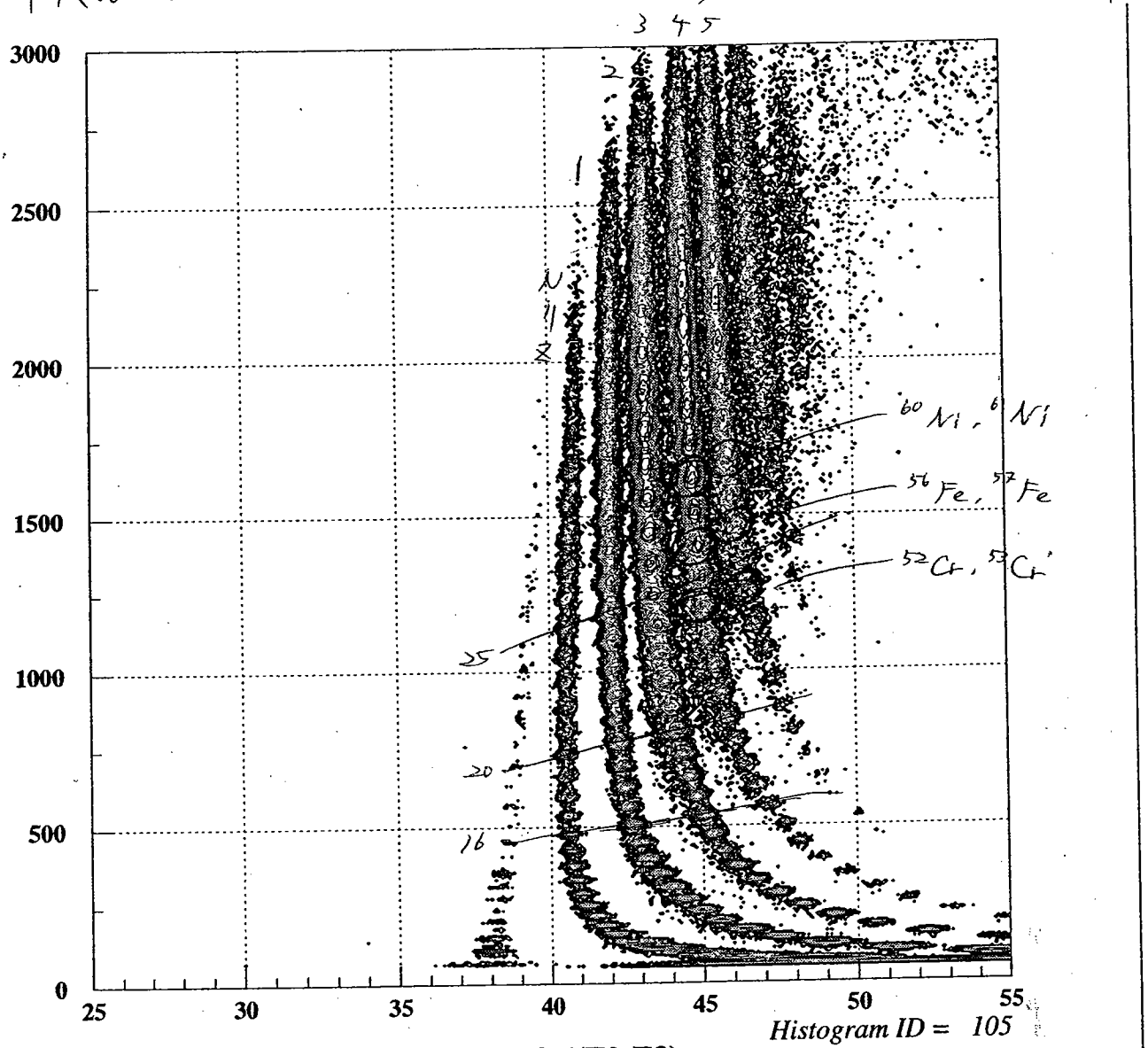
event

105

Change the Attenuator

RING

Run 91 Be (12) BP = 1.89



dEl vs TOF(F2-F3)a

D1 = 525.766

D2 = 526.021

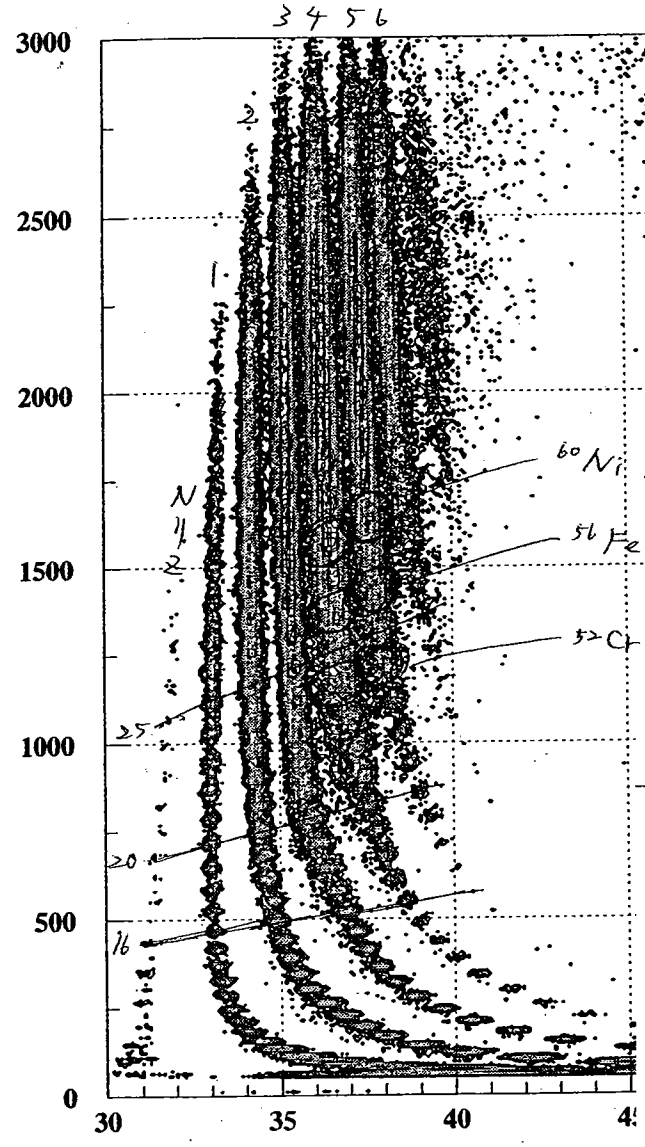
ung 970240

Okuno 2961

^{52}Cr	5684
^{53}Cr	1150
^{56}Fe	11429
^{57}Fe	3338
^{60}Ni	18987
^{61}Ni	8064
all event	792024

CAEN METWORK is down.

Run 93, 95, 96 Be(92) BP=1.91



^{52}Cr	2612	775	
^{53}Cr	~~596~~ 547	206	
^{56}Fe	5967	1793	
^{57}Fe	1859	533	
^{60}Ni	10801	3236	
^{61}Ni	4587	1494	
all event	408212	all 120048	

93 95

^{52}Cr : 4724 ⇒ 4.2576

^{53}Cr : 1356 ⇒ 1.2221

^{56}Fe : 10445 ⇒ 9.414

^{57}Fe : 3228 ⇒ 2.909

^{60}Ni : 18146 ⇒ 16.355

^{61}Ni : 7261 ⇒ 6.544

all event : 701622

using only Run 96 data here

D1 = 531.298

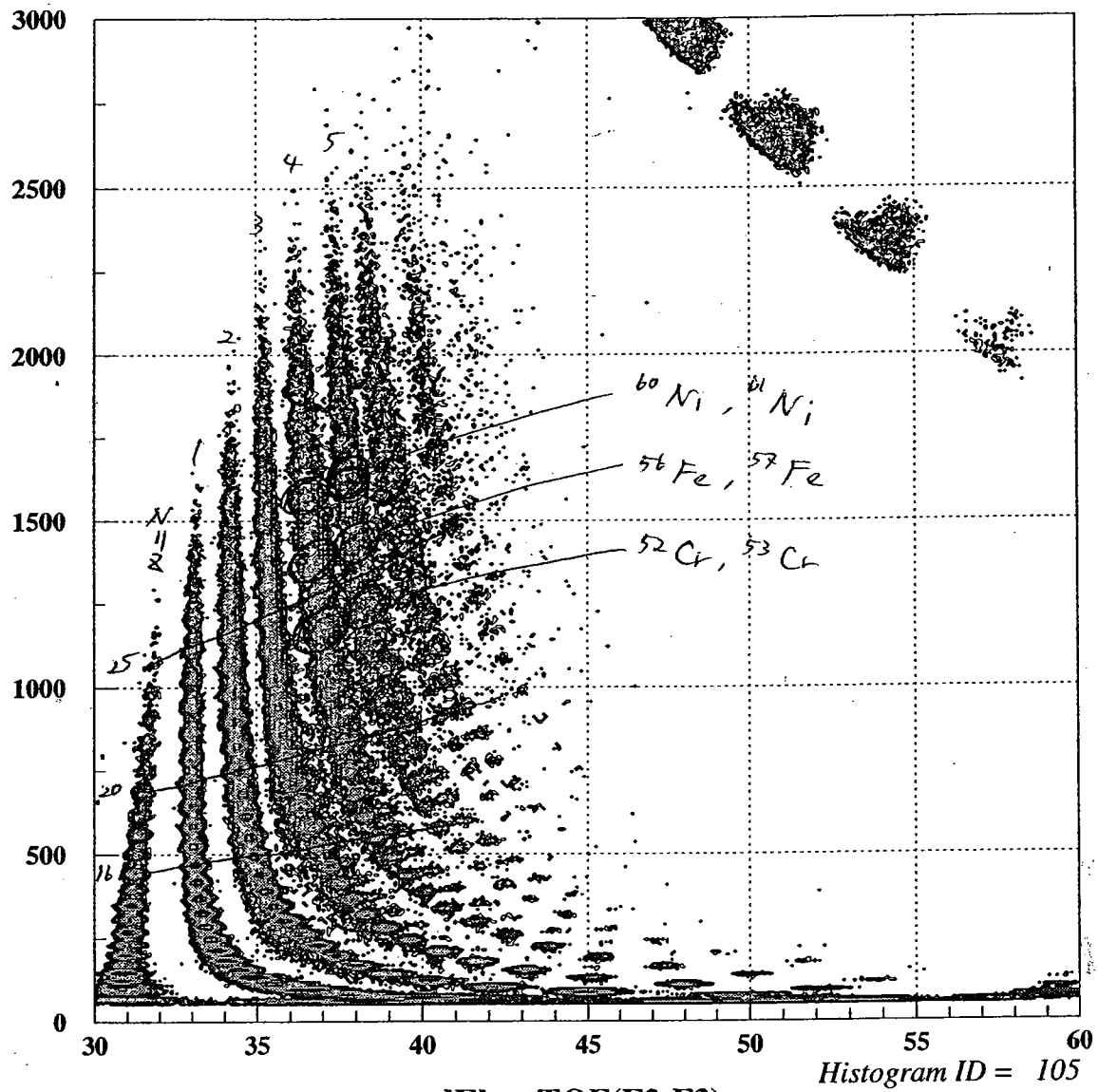
D2 = 531.797

Run	583576	169446	101108 ⇒ 176410
Okuno	1081	308	1864 ⇒ 3253
	93	95	96

Run

10

Run 97 Ta (166) BP = 1.91



D1 = 531.297

D2 = 531.718

Uxy 843053

Okura 13665

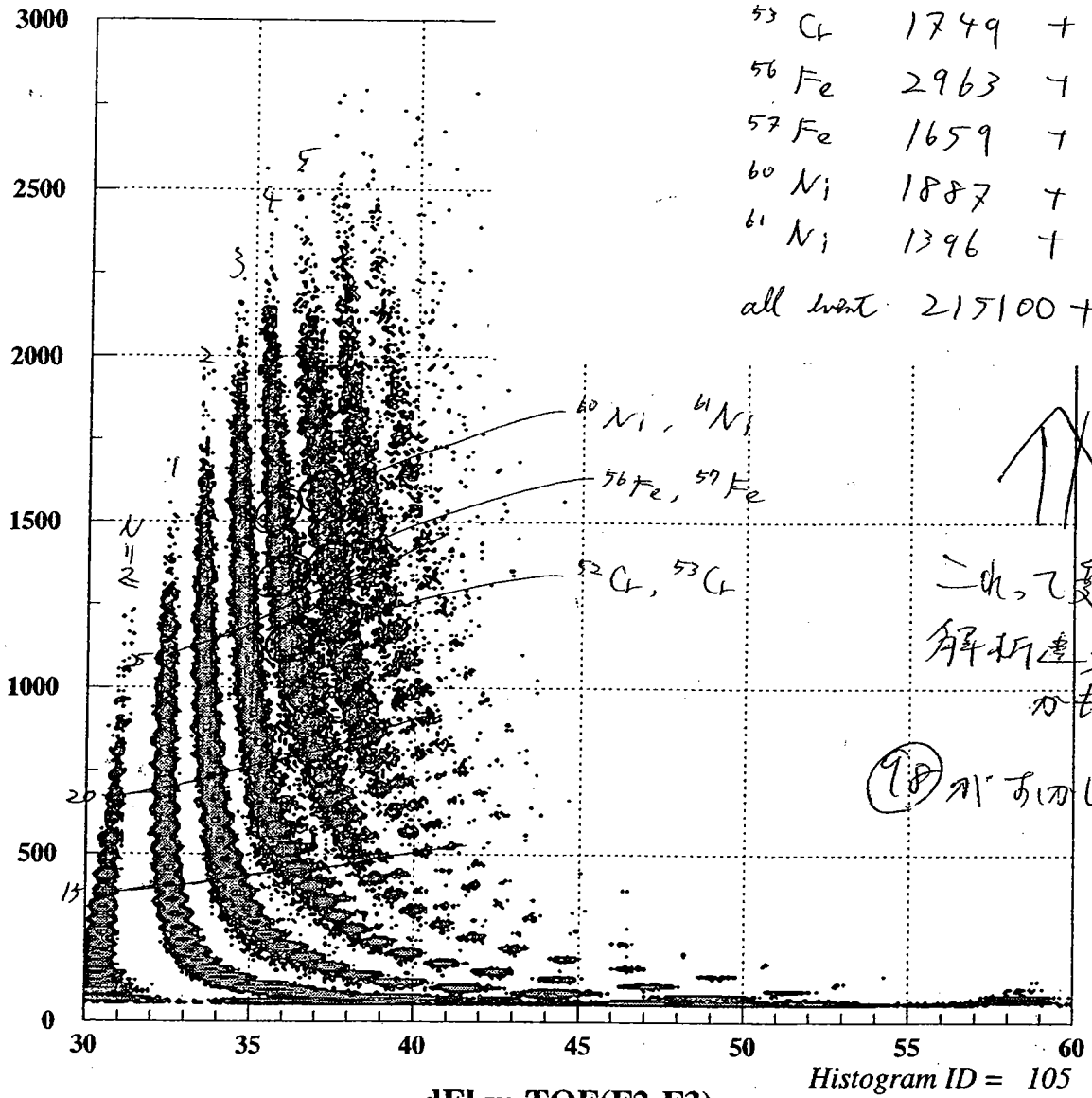
^{52}Cr	4791	⇒	0.4522
^{53}Cr	2521	⇒	0.2379
^{56}Fe	4154	⇒	0.392
^{57}Fe	2566	⇒	0.242
^{60}Ni	2386	⇒	0.2252
^{61}Ni	1737	⇒	0.164

all event 653676

Run 98, 99

Ta (166) BP = 1.93

(98)



dEvs TOF(F2-F3)a

	(98)		(99)
^{52}Cr	3053	+	3324
^{53}Cr	1749	+	588
^{56}Fe	2963	+	3201
^{57}Fe	1659	+	870
^{60}Ni	1887	+	2180
^{61}Ni	1396	+	883

all event 215100 + 396988

これって実験違うかも

(98)がおかしい

D1 = ~~531.247~~ 536.298

D2 = ~~531.718~~ 537.193

run	436830	557546 ⇒ 994376
0/run20	6062	7735 ⇒ 13797
	98	99

Run

109

Attenuator change

LINAC 100
RING $\frac{1}{3}, \frac{1}{2}$ > $\frac{1}{600}$

Run 100 Be(92) DP = 1.93

D1 =

D2 =

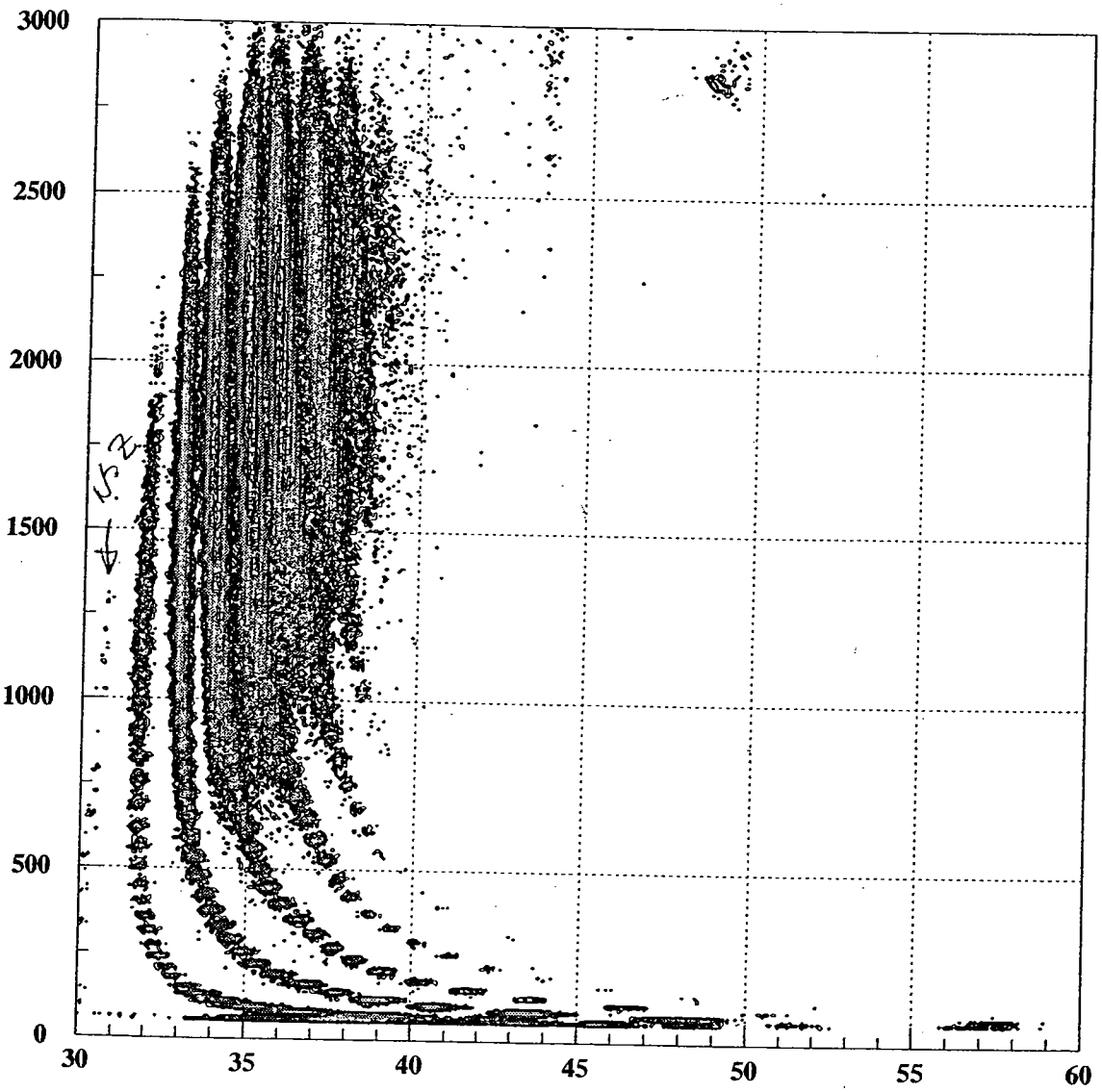
Run 1097087

akuno 1250

Run 101 ^{9}Be 92mg/cm^2 D1 = 542.338

D2 = 542.580

BP = 1.95



dEl vs TOF(F2-F3)a

ung 166 1945

OKNO 1096

Exp 543053 Okuno 13665

Run102 Ta target D1=542.337

17:05~ D2=542.600

attenuator (1/2) removed.

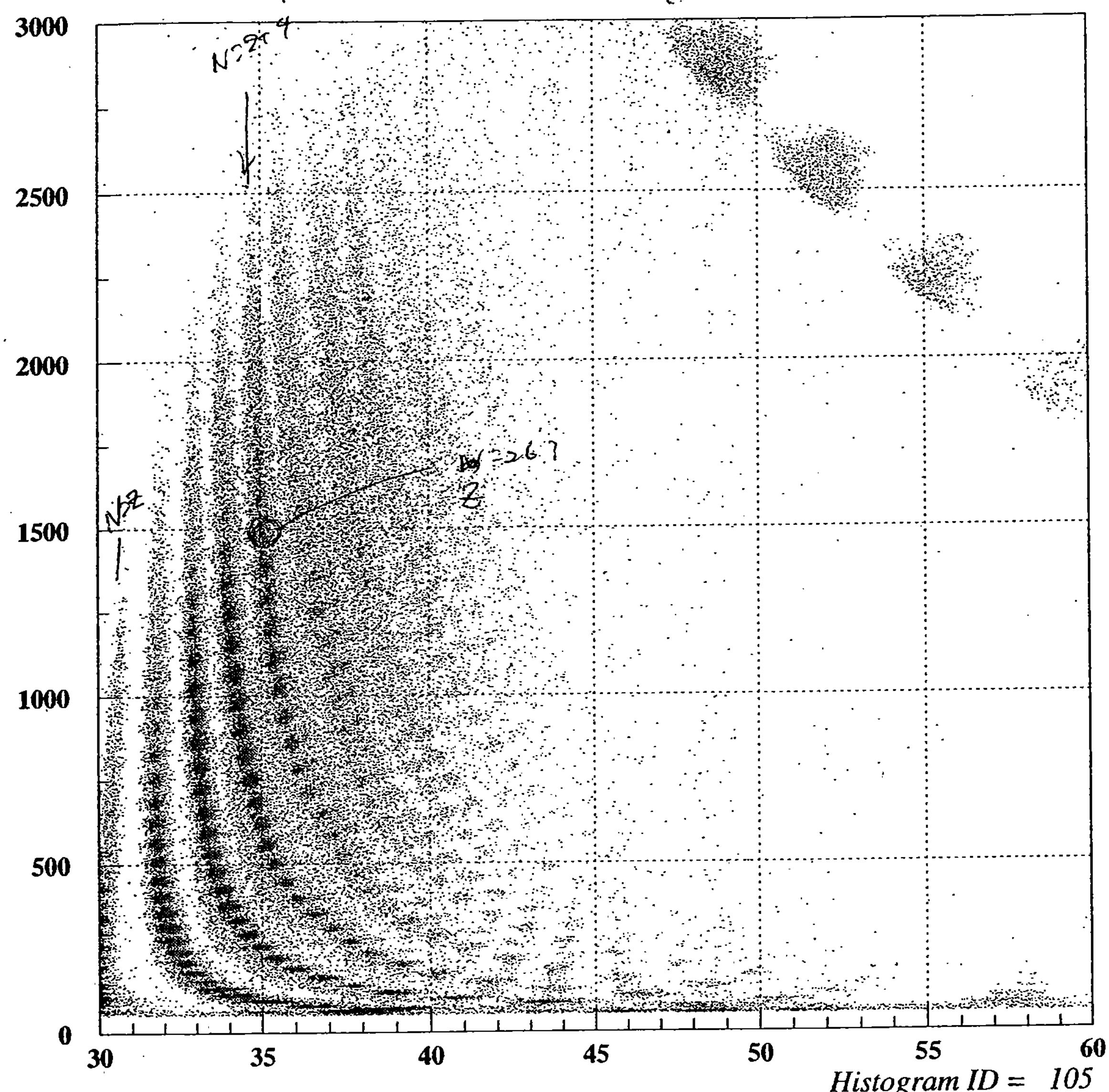
eng 436830 deuxo 6062

~~eng 593053 deuxo 13665~~

Run103

heat 105 ! conto run103

D1= 347840 D2 = 348.



dEl vs TOF(F2-F3)a

after this plot
tof is shifted to +5ns

WHO REWRITE PARAMETER
FILE ??

ID...

Run104 Be 0.5 mmt att. 1/2 in

Linac discharge.

18:20 ~ D1 = 547.842

D2 = 548.200

18:36 ~ ^ eri. ana

start ~~ana~~ analyse.

Run105 Be 0.5 mmt.

D1 = 553.365 mT

D2 = 553.~~389~~672 mT

attenuater : Linac 1/100

RRC 1/2 × 1/3

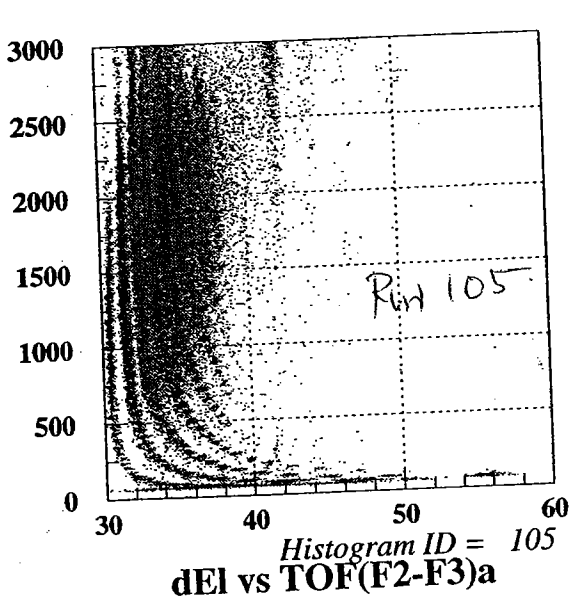
21:45 RF is down. (run 109)

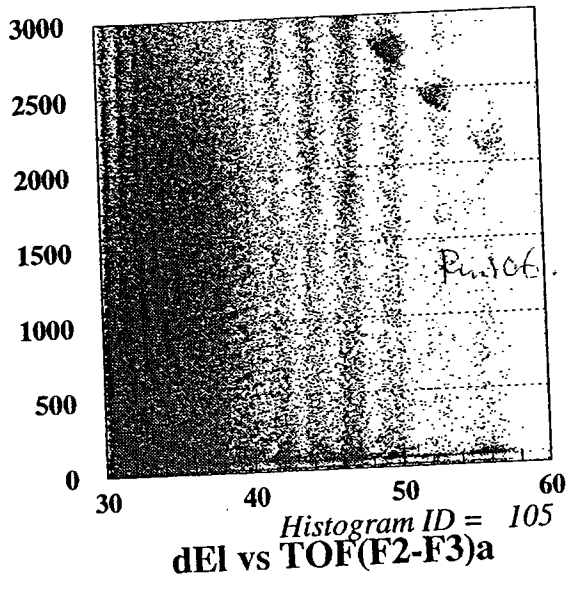
run stop.

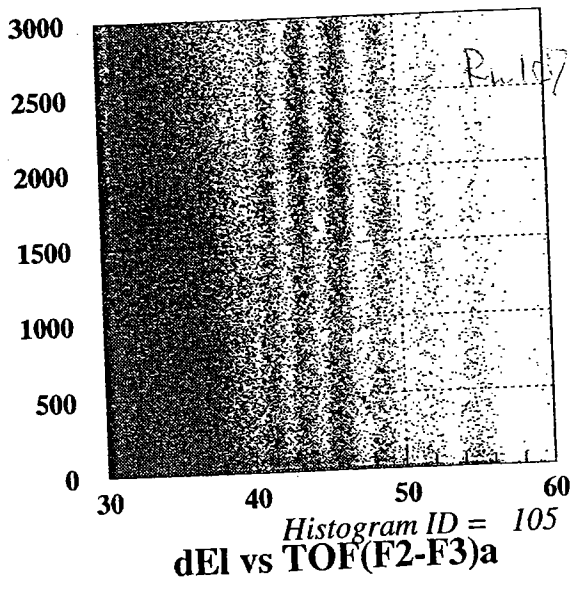
~22:30 We found that dE1 signal is strange.

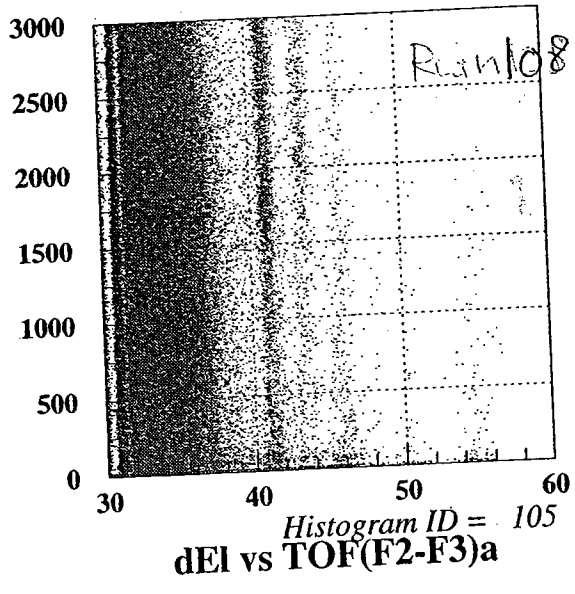
→ S-Amp is oscillating.

change S-Amp.

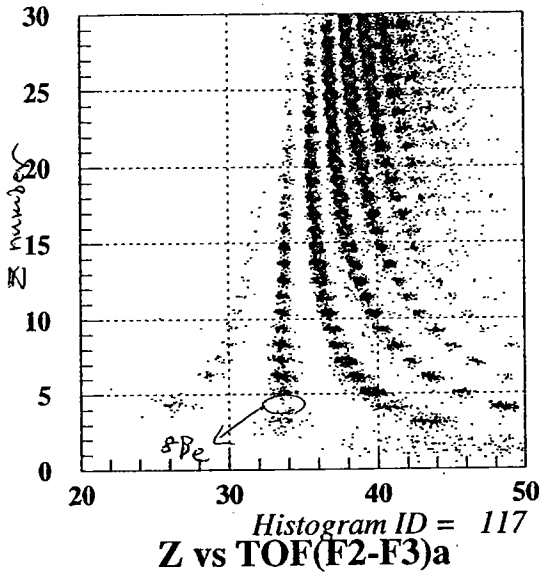








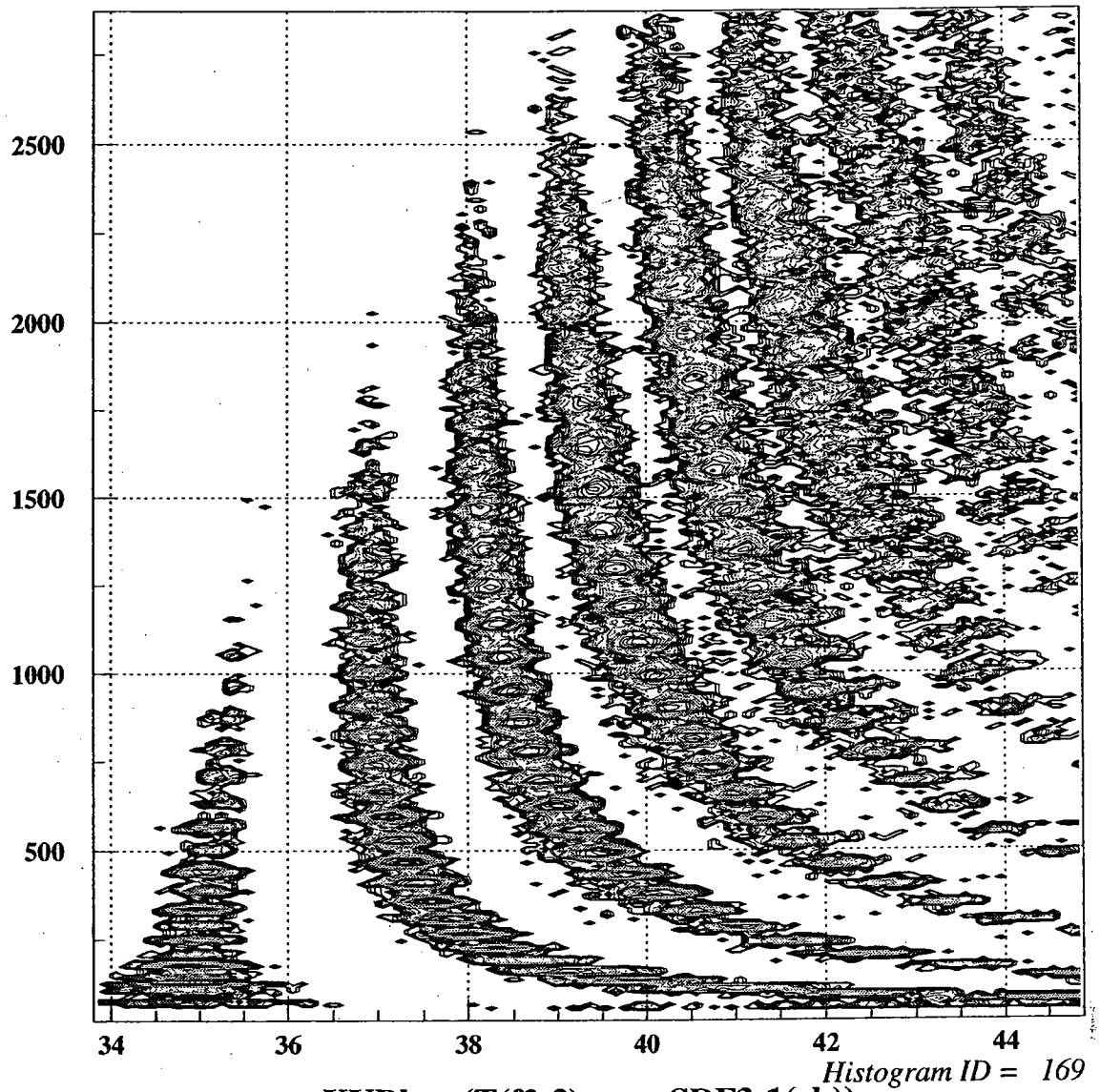
during Run 106. oscillation starts.

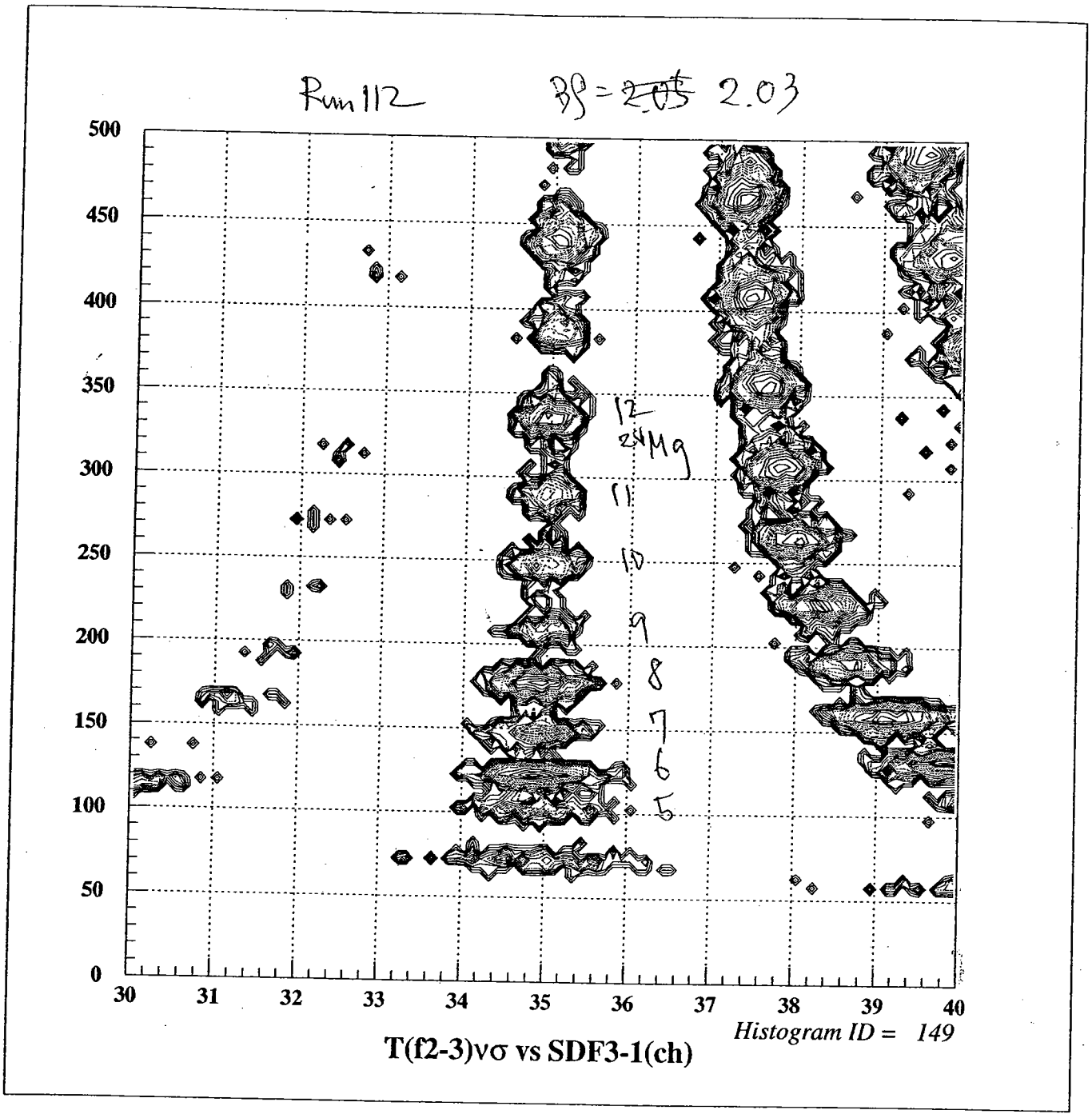


Run113

Z-number axis defined

Run 112. Bρ = ~~2.05~~ 2.03




Run 112
Bρ = 2.05 2.03
500
450
400
350
300
250
200
150
100
50
0
30
31
32
33
34
35
36
37
38
39
40
12
24Mg
11
10
9
8
7
6
5
Histogram ID = 149
T(f2-3)νσ vs SDF3-1(ch)

15

:50 PM

CHANGE

F1 slit ±10mm → ±2mm

Attenuator

Linac 1/100

RRC 1/6 → 0 changed! ~ 850 cps (ungated trigger)

→ start RUN 114

1/6 (SUN)

0:05 AM

F1 slit ±2mm → ±5mm CHANGED!

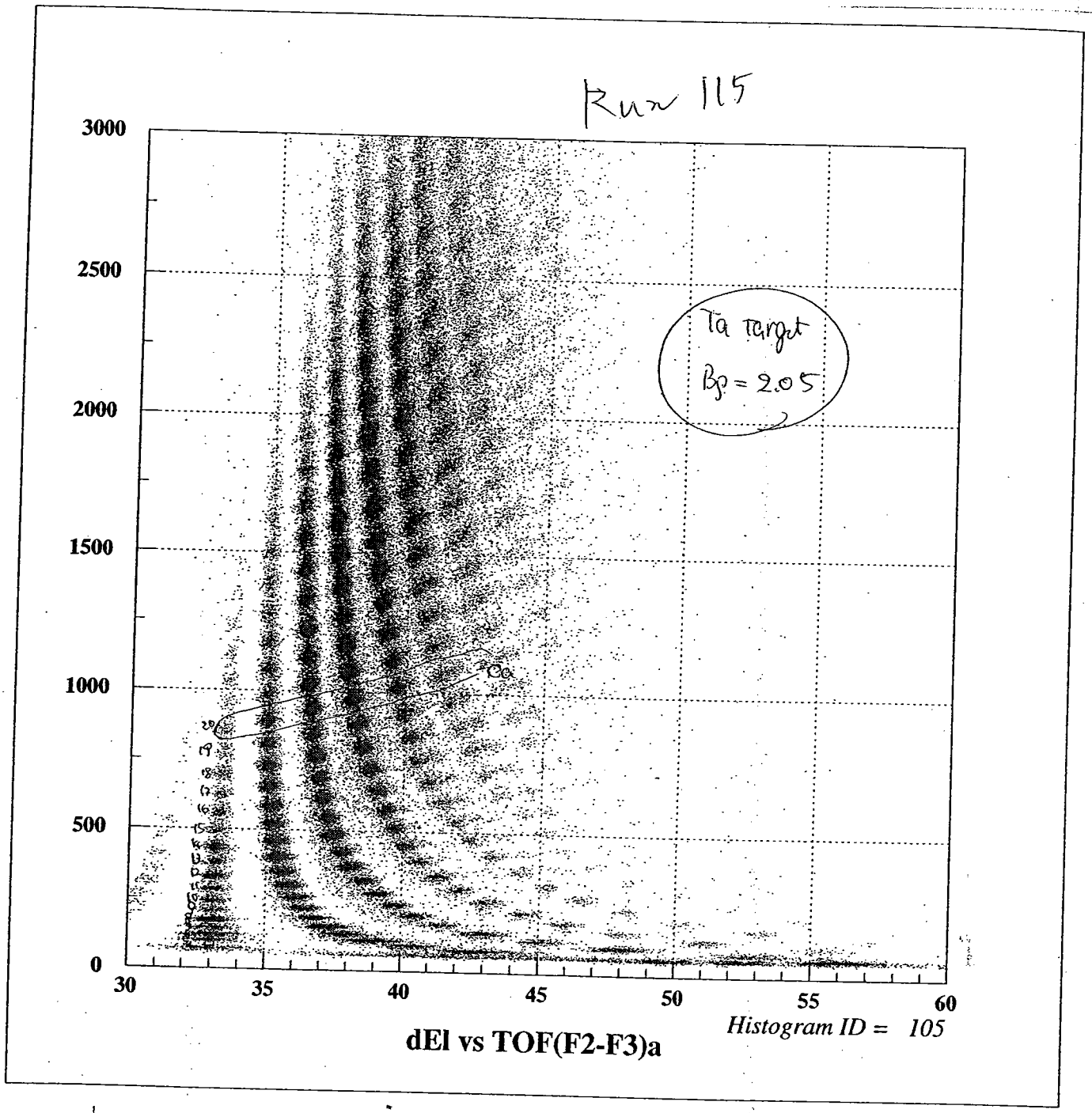
Attenuator

RRC 0 → 1/3 ~ 700 cps. (ungated trigger)

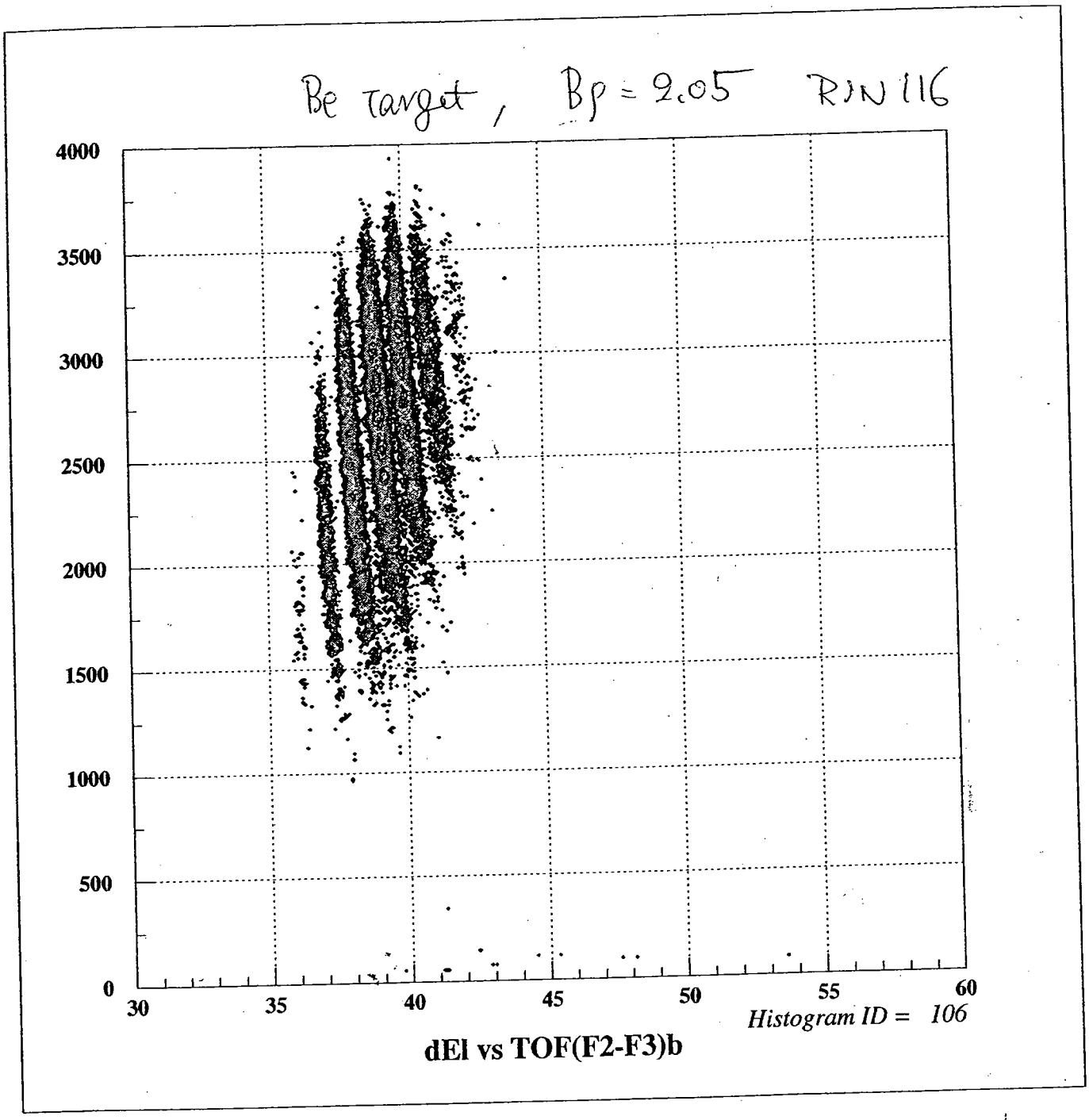
Bg 2.03 → 2.05

D1 : 569.897

D2 : 5470.433


Run 115
Ta target
Bρ = 2.05
3000
2500
2000
1500
1000
500
0
30
35
40
45
50
55
60
dEl vs TOF(F2-F3)a
Histogram ID = 105

(RRC att. 1/20 for Be run.) for 116
(att. 1/3 for Ta run.) for 115



for all run. linear att. is 1/100

Maybe we forget take Be target with Bp = 2.03 run.

and we also check hysteresis of the F1 slit position.

10. 1:30 RUN 117

Bp = 2.03

Be target.

att @ RRC 1/10. → ~~typical att~~

~ 600 cps (ungated trigger)

≈ F2 pil L

RUN 118

Bp = 2.03

Ta target

att @ RRC 1/3 → ~700 cps (ungated trigger)

≈ F2 pil L

RUN 1189

Bp = 2.07

Ta target

att @ RRC 1/6 → ~200 cps (ungated trigger)

≈ F2 pil L

1/6 → 1/50 → ~~1/50~~

RUN 120

Bp = 2.07

Be target

att @ RRC 1/20 → ~1000 cps (ungated trigger)

≈ F2 pil L

RUN 121

Bp = 2.09

Be target

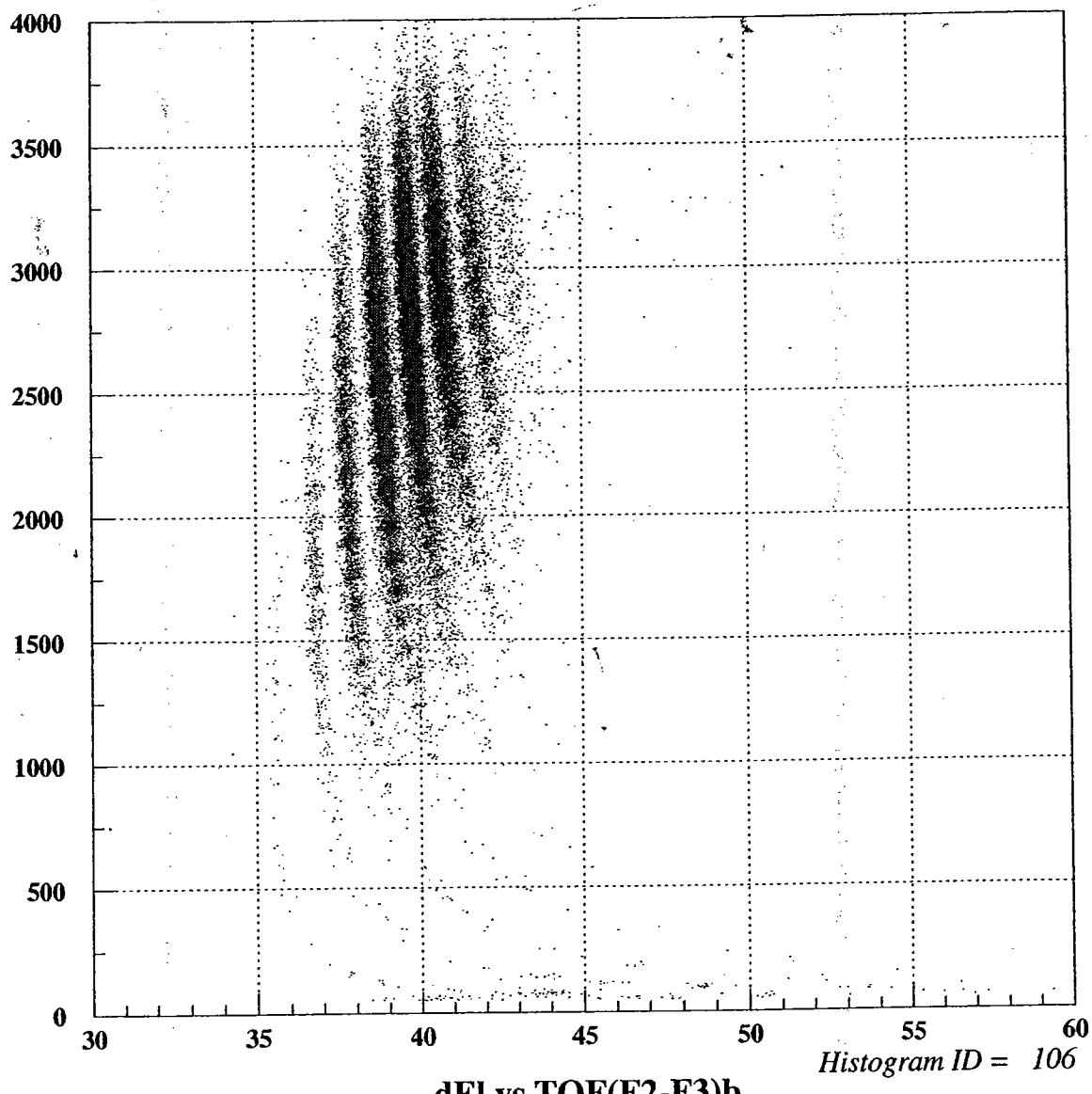
att @ RRC 1/30 → ~250 cps

RUN 122

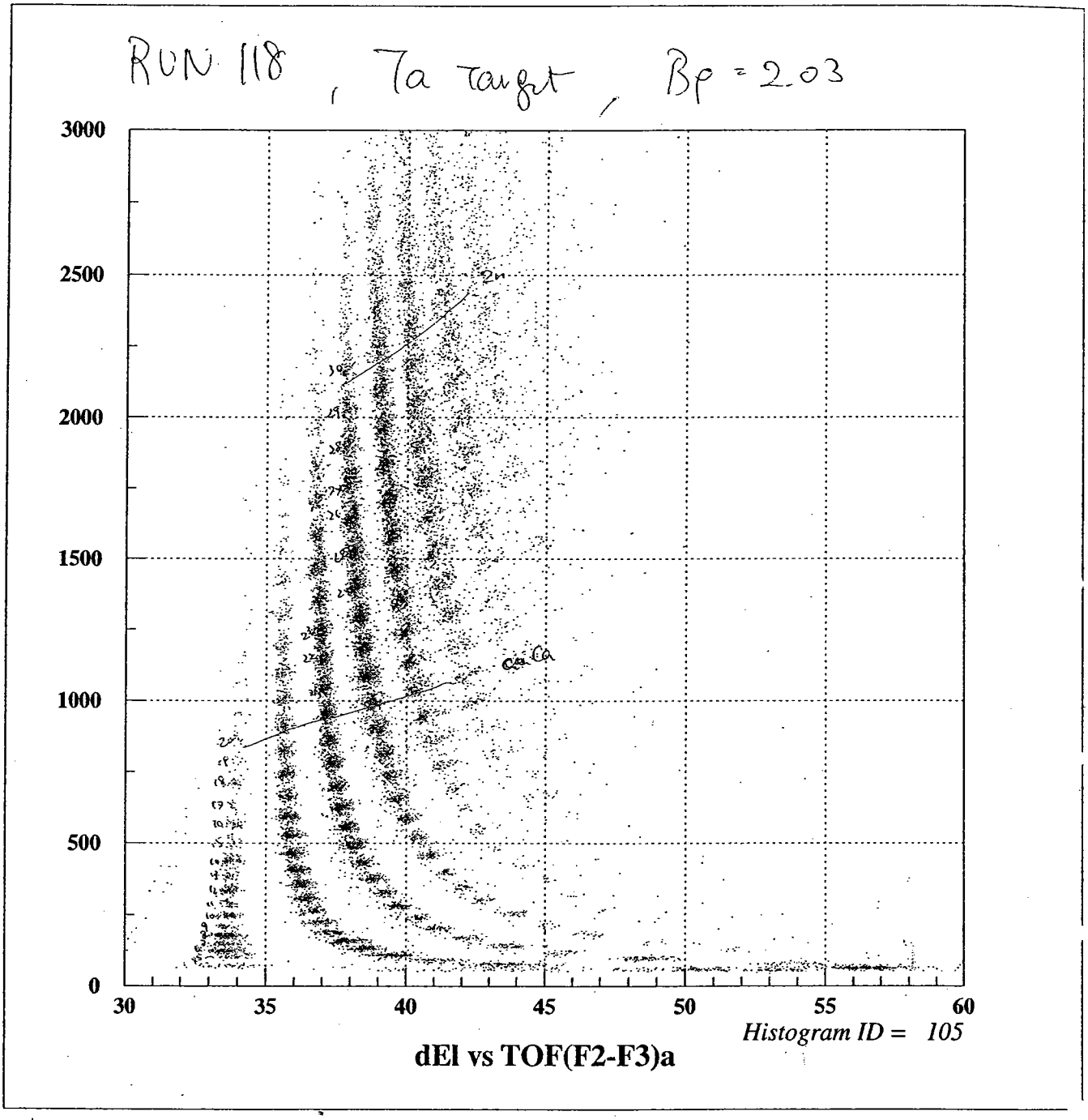
Bp = 2.09

Be Ta target → ~250 cps

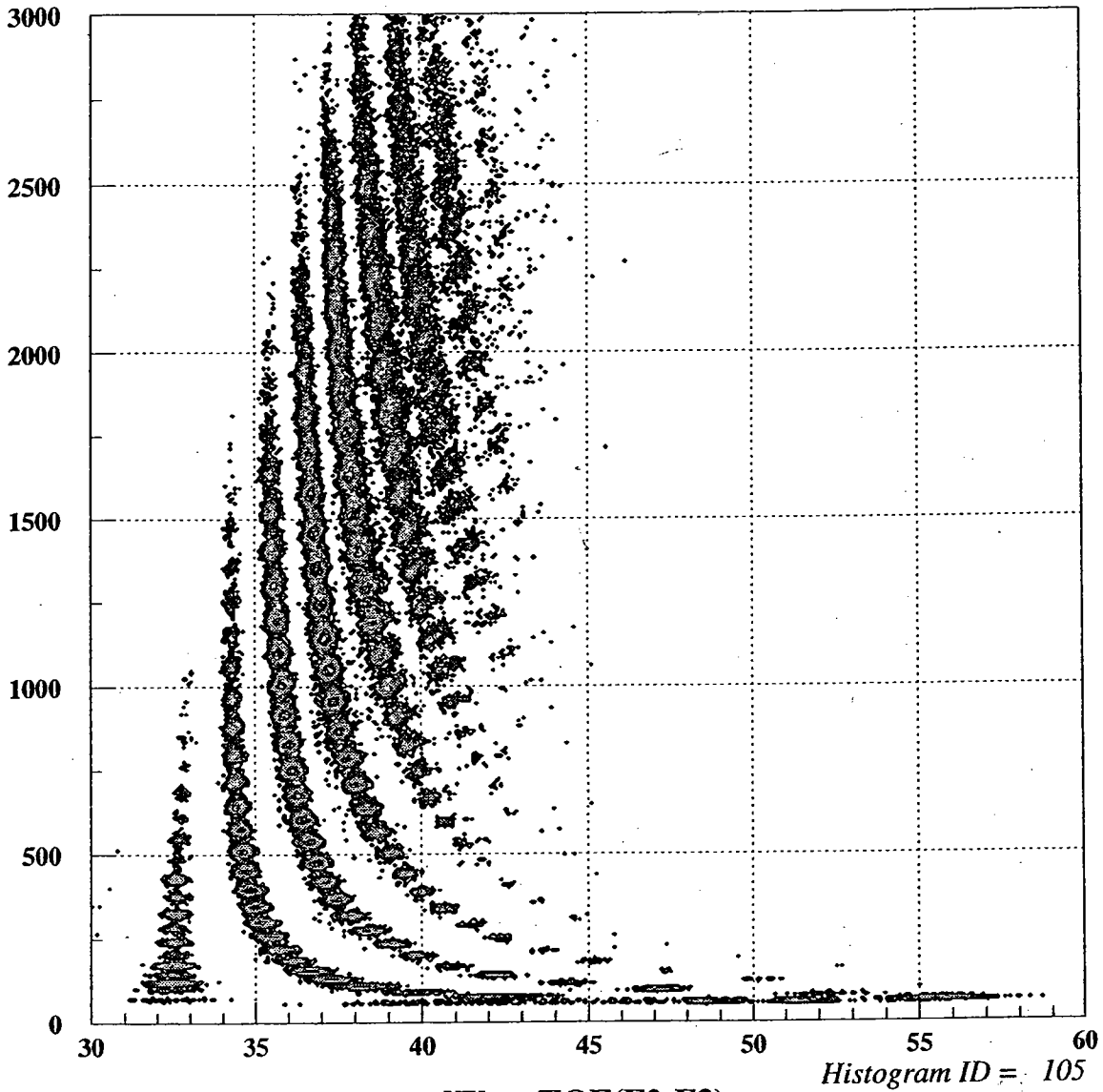
RUN 117, target Be , ~~Brho~~ Bρ = 2.03



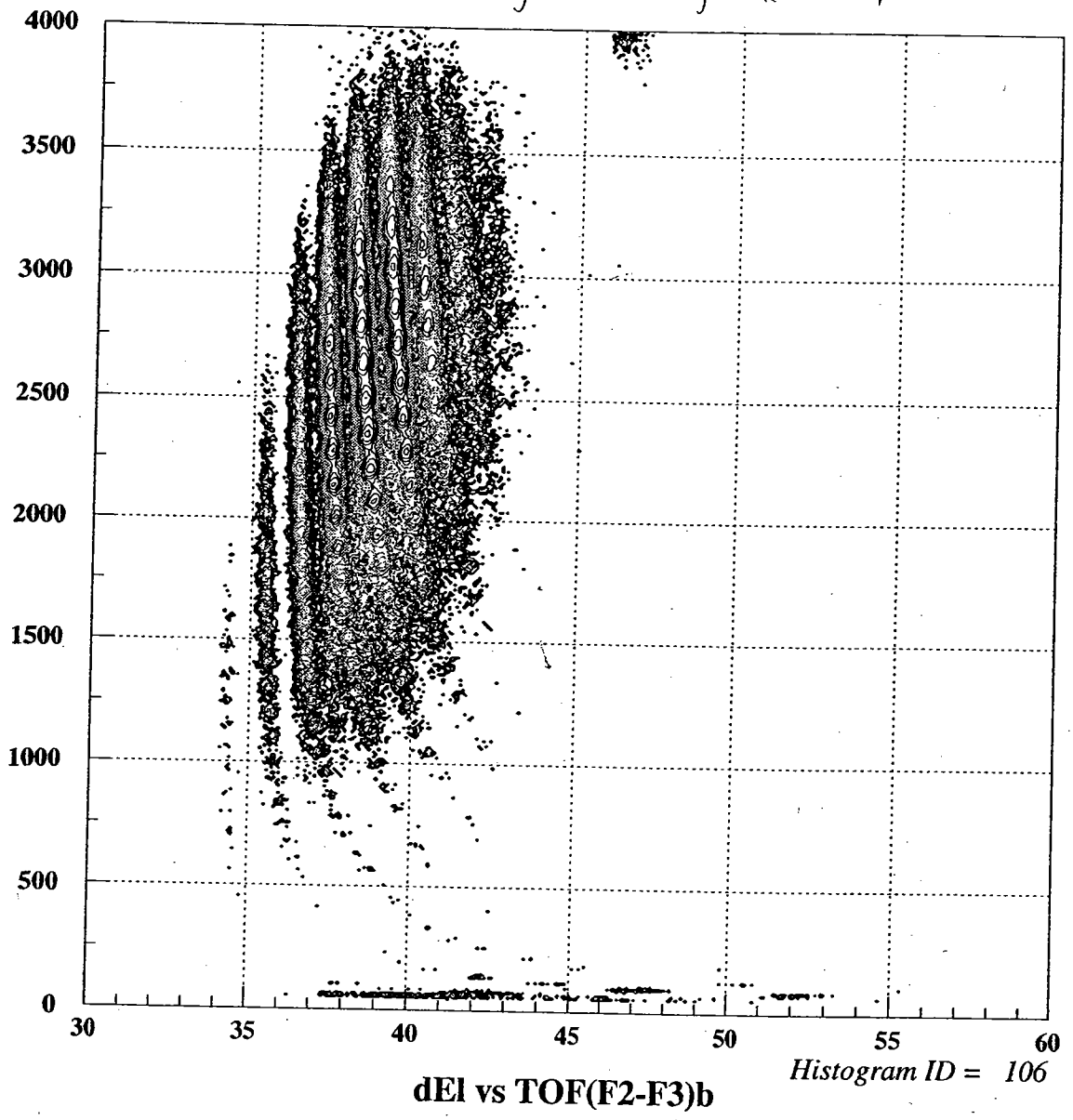
dEl vs TOF(F2-F3)b

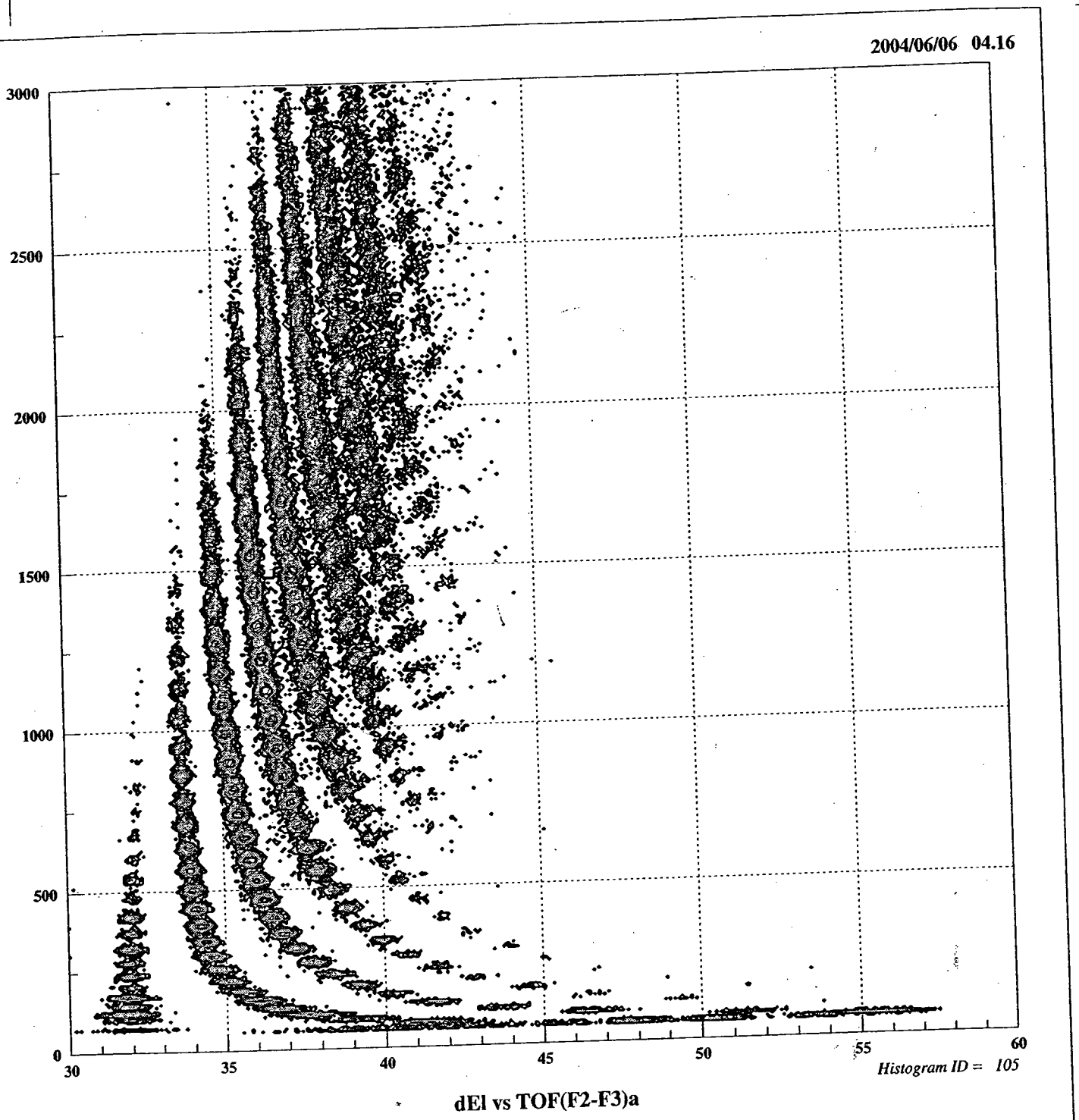

RUN 118, Ta target, Bp = 2.03
3000
2500
2000
1500
1000
500
0
30
35
40
45
50
55
60
2n
Ca Ca
Histogram ID = 105
dEl vs TOF(F2-F3)a

RUN 119, Ta Target, Bρ = 2.07



RUN 120, Be target, Bρ = 2.09




2004/06/06 04.16
3000
2500
2000
1500
1000
500
0
30
35
40
45
50
55
60
Histogram ID = 105
dEl vs TOF(F2-F3)a

New PAT TAPE

RUN 123, 124

Bp = 2.11 D2 ~~[illegible]~~

adjust − 0.02%.

Ta Target

att $\frac{1}{6}$ (RRC) 1100 cps @F2 pi L.

beam adjustment.

RUN 123 and 124 ~~is~~ are same condition.

~~[illegible]~~

RUN 125

Bp = 2.11

Be target

att $\frac{1}{30}$ @ RRC ~ 1kcps. @ F2L

$\frac{1}{100}$ @ Linear

RUN 126

Bp = 2.13 D2 adjust − 0.03%,

Be target

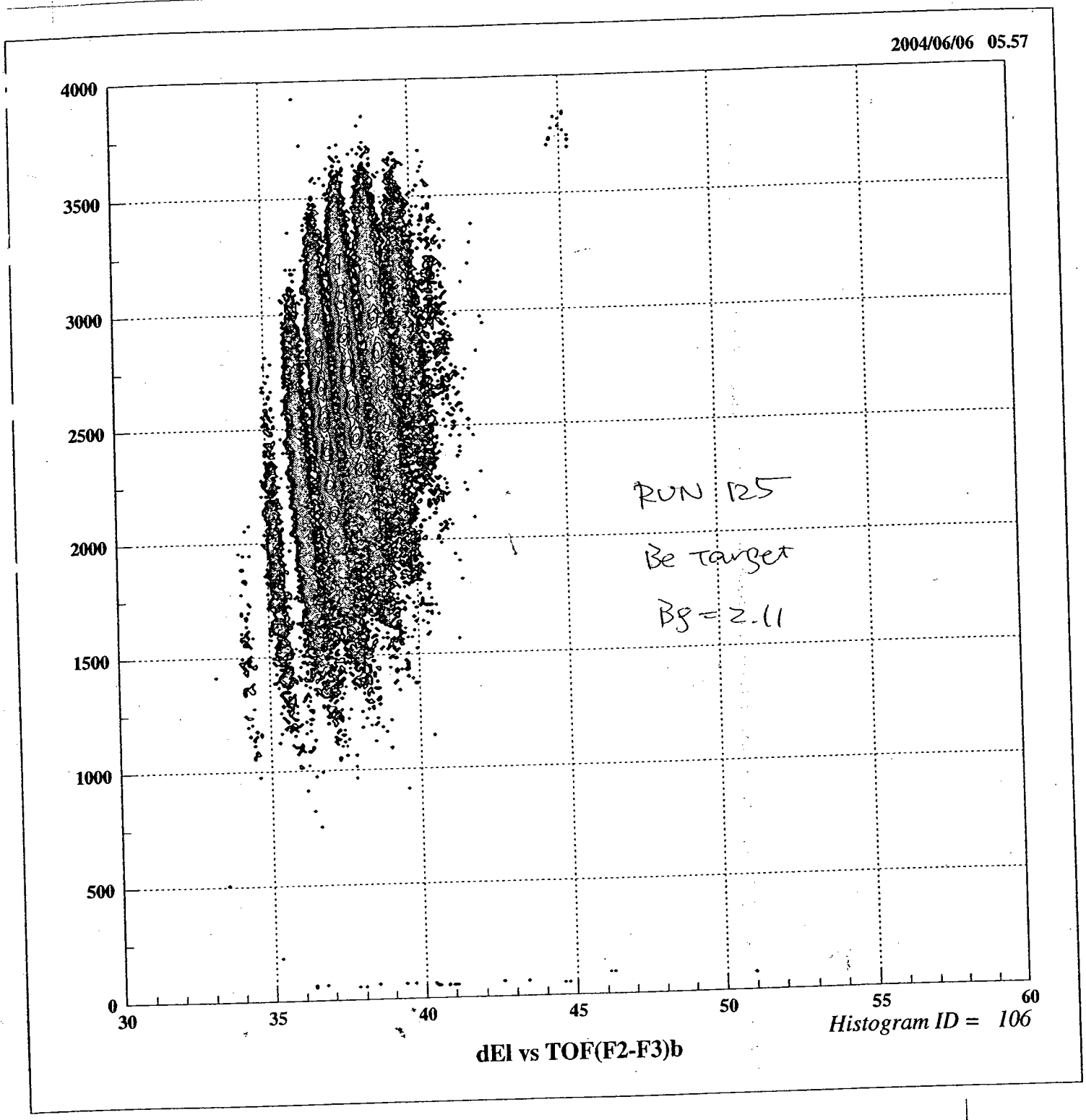
att $\frac{1}{60}$ @RRC $\frac{1}{100}$ @ linear ~ 636 cps @ F2L

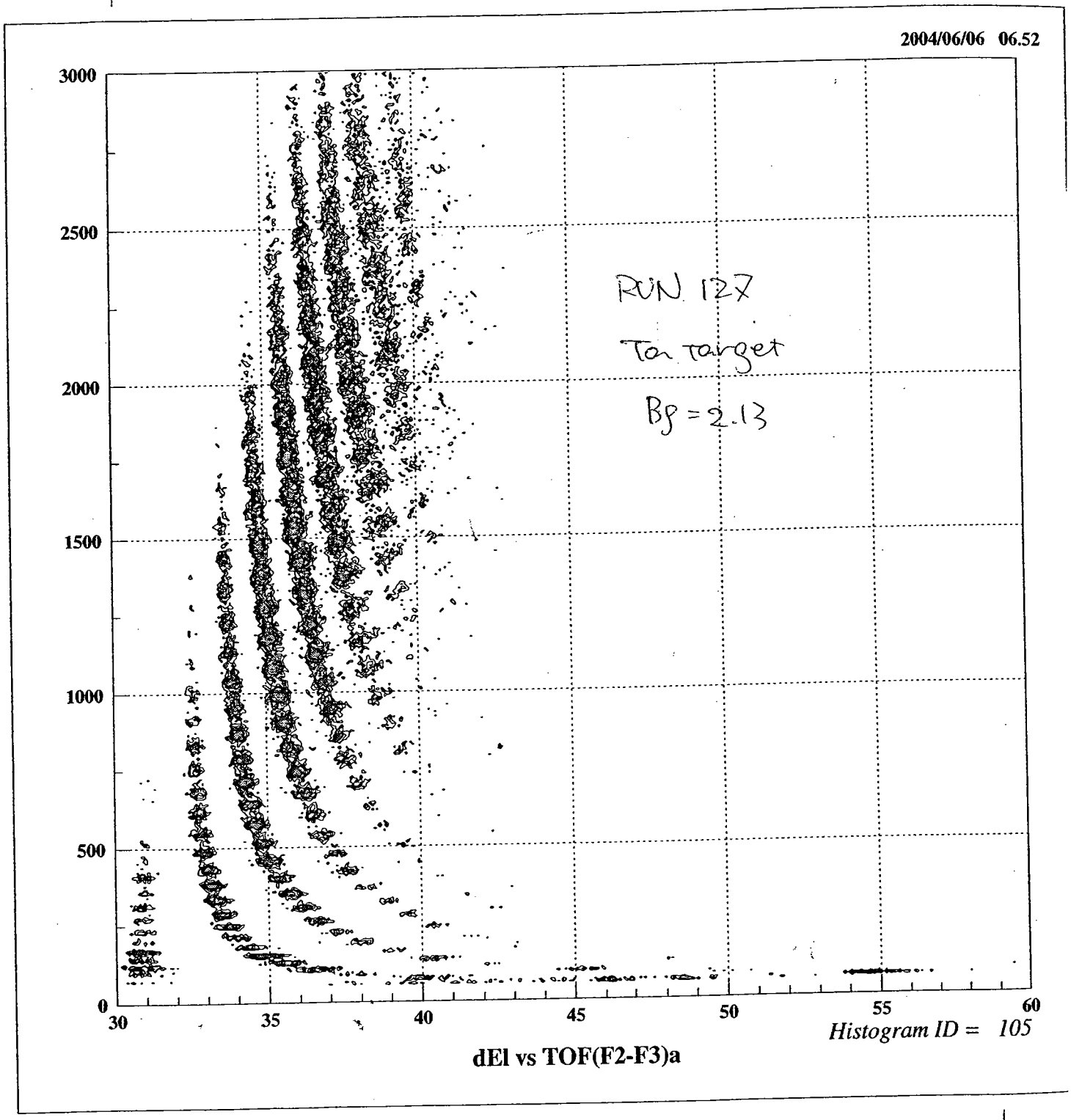
RUN 127

Bp = 2.13

Ta target

att


2004/06/06 05.57
4000
3500
3000
2500
2000
1500
1000
500
0
30
35
40
45
50
55
60
RUN 125
Be target
Bg = 2.11
Histogram ID = 106
dEl vs TOF(F2-F3)b


2004/06/06 06.52
3000
2500
2000
1500
1000
500
0
30
35
40
45
50
55
60
RUN 127
Ta target
Bρ = 2.13
Histogram ID = 105
dEl vs TOF(F2-F3)a

Run 128

Bρ = 2.15 D2 adjust −0.04%

Ta target ~ 0.46 kcps

att RING $\frac{1}{5}$, $\frac{1}{10}$ LINAC $\frac{1}{10}$, $\frac{1}{20}$

Run 129

Bρ = 2.15 Be (92) Tgt ~ 0.7 ~ 0.3 kcps

att RING $\frac{1}{100}$, $\frac{1}{3}$, $\frac{1}{2}$ LINAC $\frac{1}{10}$, $\frac{1}{2}$, $\frac{1}{3}$

This run is not bad, but operator said he want to stop the beam, so, I stopped the run.

Run ~~129~~ 130

Same as 129 ← gate valve is closed
Operator do not know why.

Run 131

Same as 130, 129

Run 132

adjust 0.03%

Bρ = 2.17 Be (92) Tgt ~ 0.8 kcps

att RING $\frac{1}{100}$, $\frac{1}{3}$, $\frac{1}{2}$ LINAC $\frac{1}{10}$, $\frac{1}{2}$, $\frac{1}{3}$

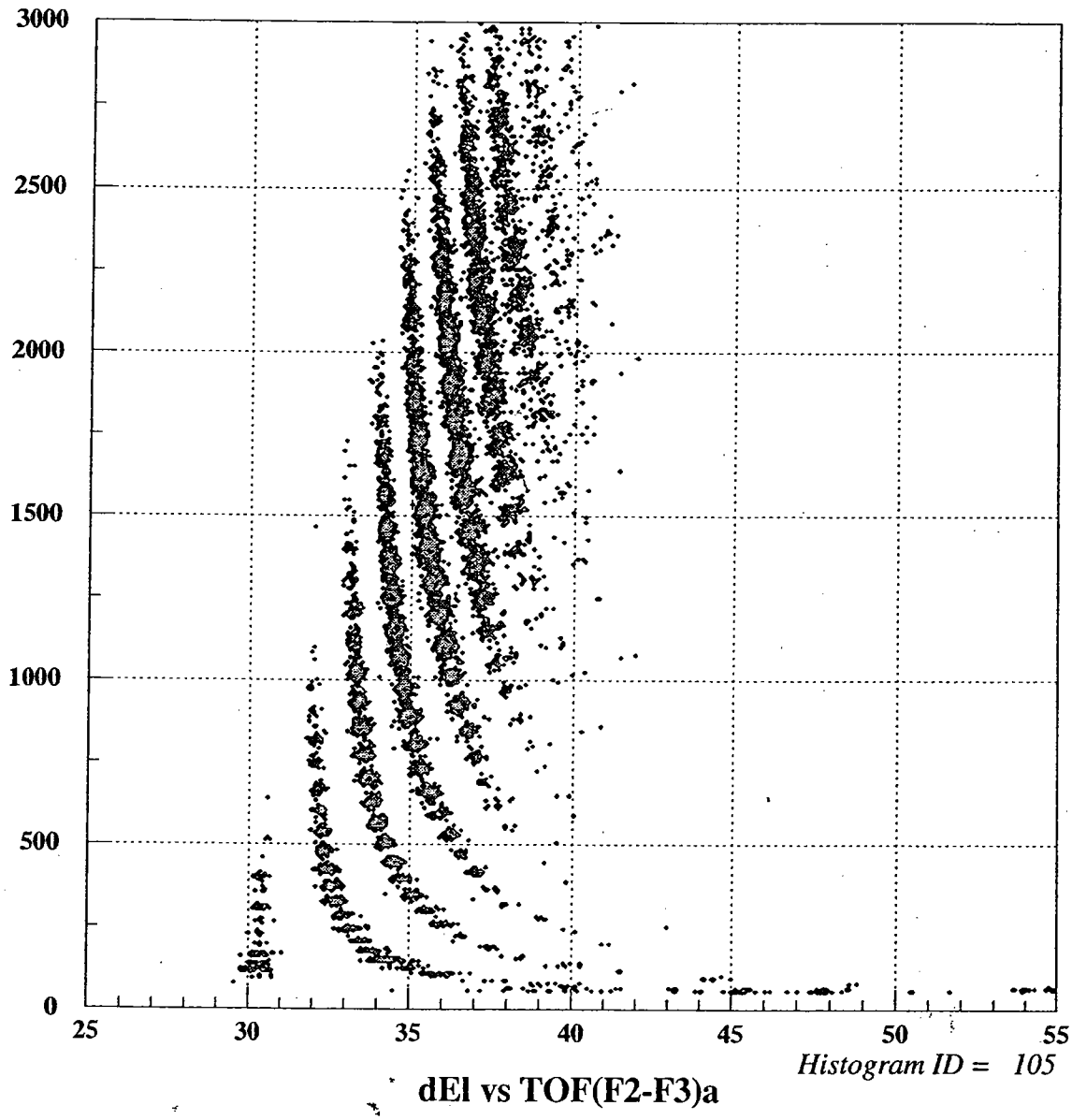
Run 133

Bρ = 2.17 Ta (166) ~ 0.6 kcps

att RING $\frac{1}{10}$ LINAC $\frac{1}{10}$, $\frac{1}{2}$?

Run 128

Run 128 Tgt = Ta BP = 2.15

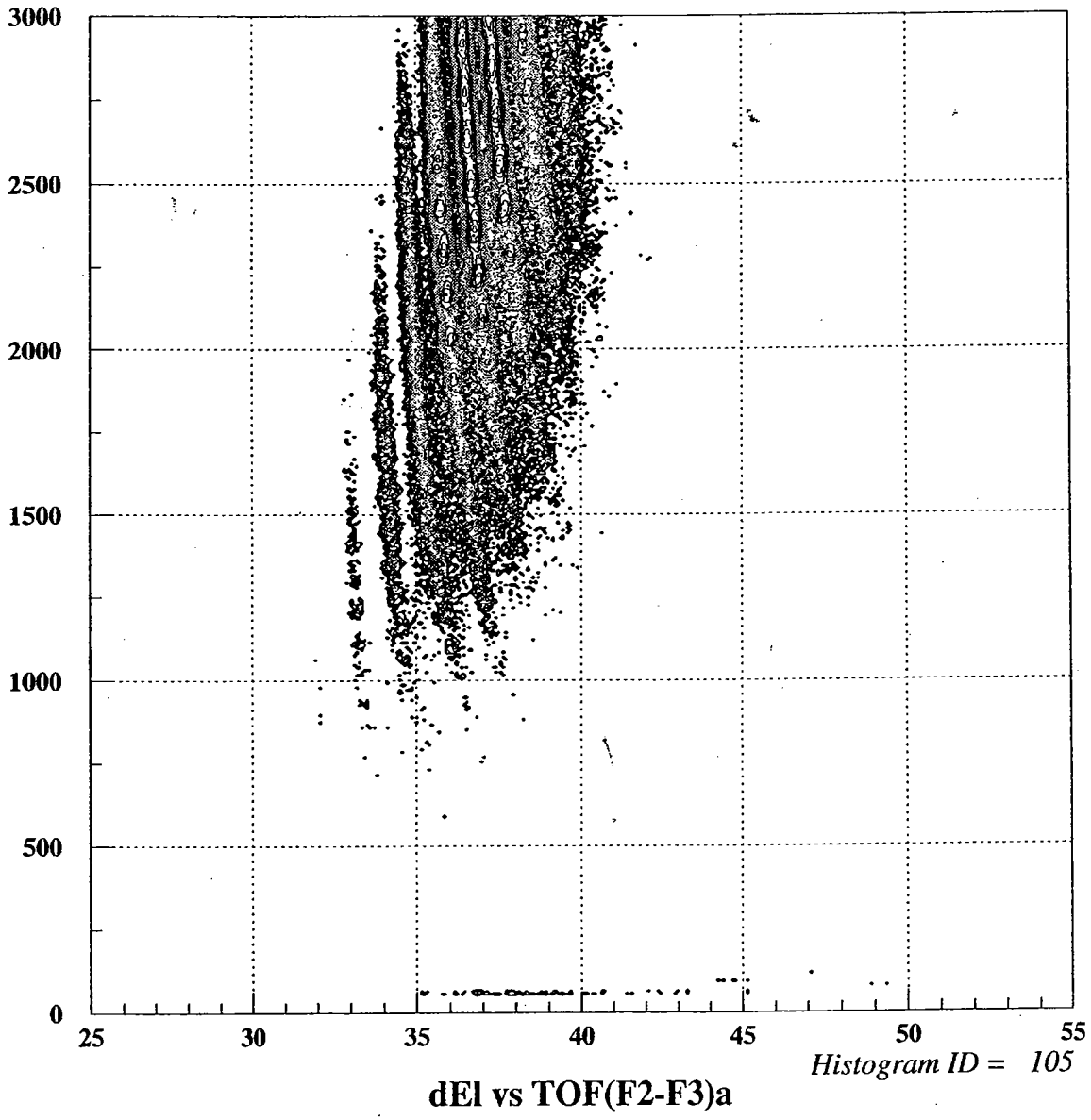


Run 129, 130, 131

D2 : 603.063
D2 : 603.290

R

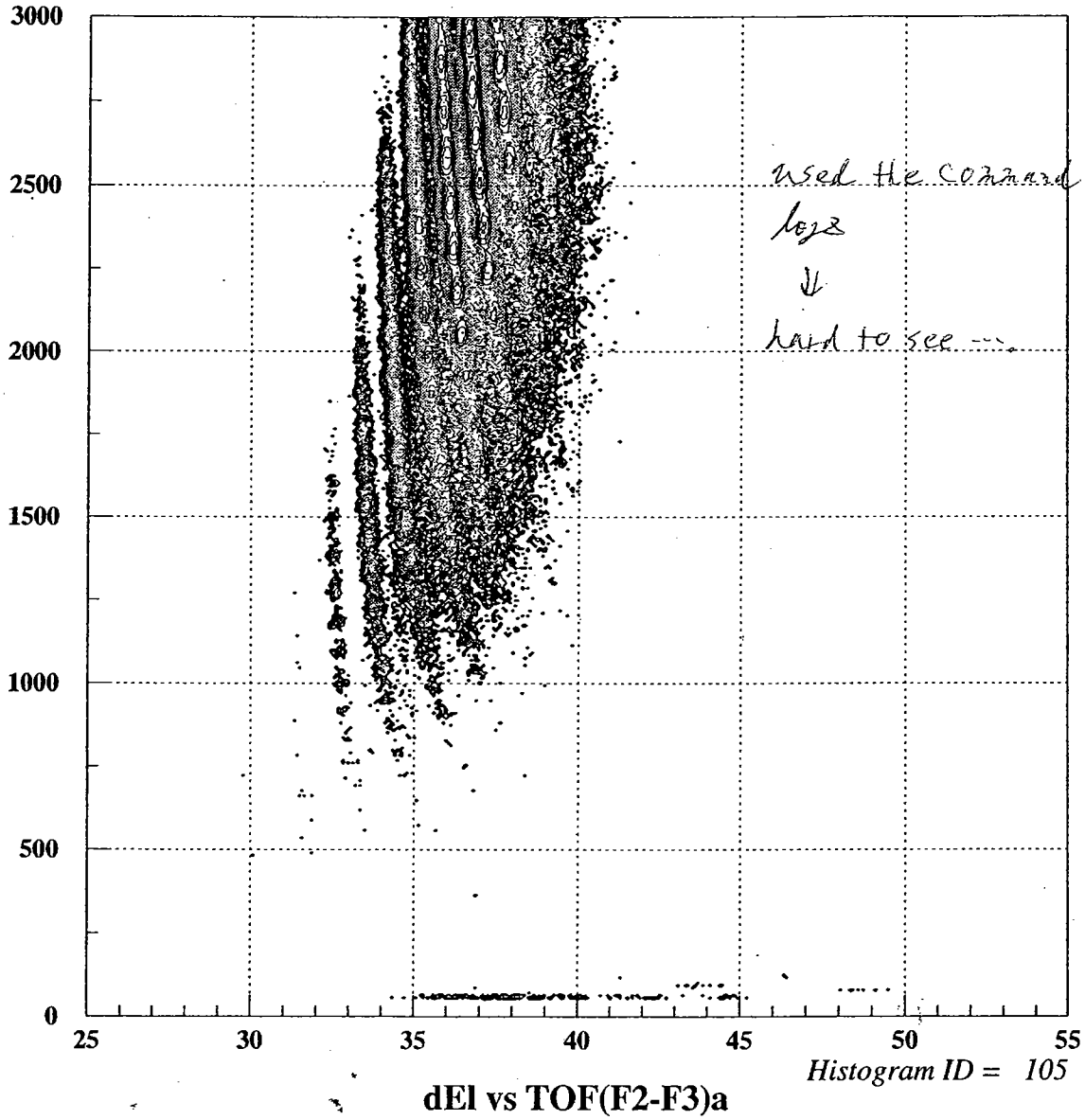
Run 131 Target = Be (92) BP = 2.15



Run 132

D1 = 603.074
D2 = 603.297

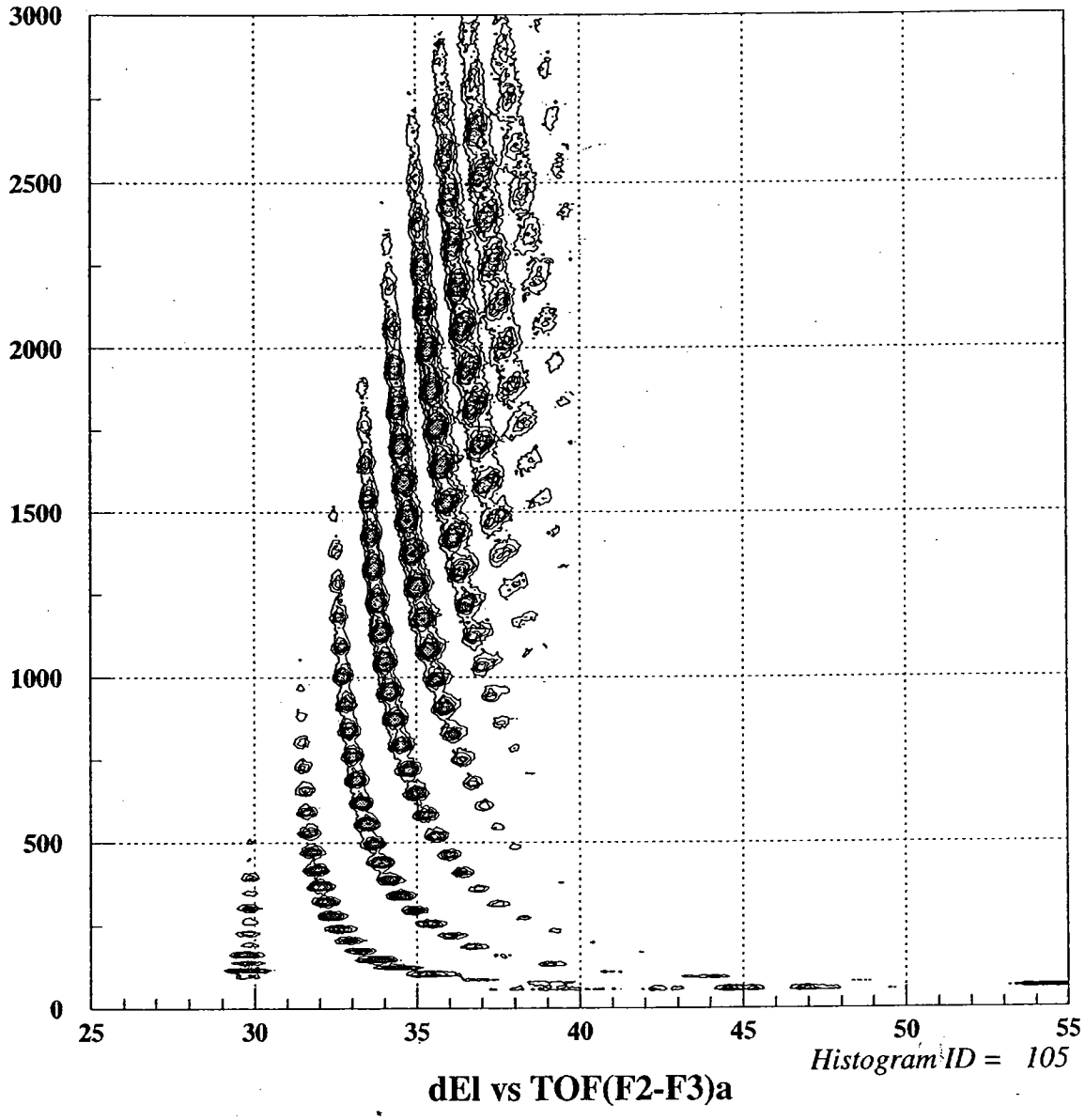
Run 132 Tgt = Be(92), BP = 2.17



Run 133

D1 = 603.024
D2 = 603.297

Run 133 $T_{\pi} = T_a(166)$, BP = 2.17



Run 134

BP = 2.19 adjust 0.03% down

Ta(166) Tgt ~ 0.6 kcps

att. RING = $\frac{1}{10}$, LINAC $\frac{1}{10}$, $\frac{1}{2}$, $\frac{1}{3}$

Run 135

BP = 2.19

Be(92) Tgt ~ 0.7 kcps

att RING = $\frac{1}{100}$, $\frac{1}{3}$, $\frac{1}{2}$ LINAC $\frac{1}{10}$, $\frac{1}{2}$, $\frac{1}{3}$

← The beam intensity fluttered a lot, So, we stop the run.

Run 136

Same as Y35

Run 137

BP = 2.21 ~ 0.7 kcps

Be(92) Tgt adjust 0.03% down

att RING: $\frac{1}{100}$, $\frac{1}{3}$, $\frac{1}{2}$ LINAC $\frac{1}{10}$, $\frac{1}{2}$, $\frac{1}{3}$

Run 138

BP = 2.21 ~ 0.5 kcps

Ta(166) Tgt

att RING $\frac{1}{10}$ LINAC $\frac{1}{10}$, $\frac{1}{3}$

Run 139

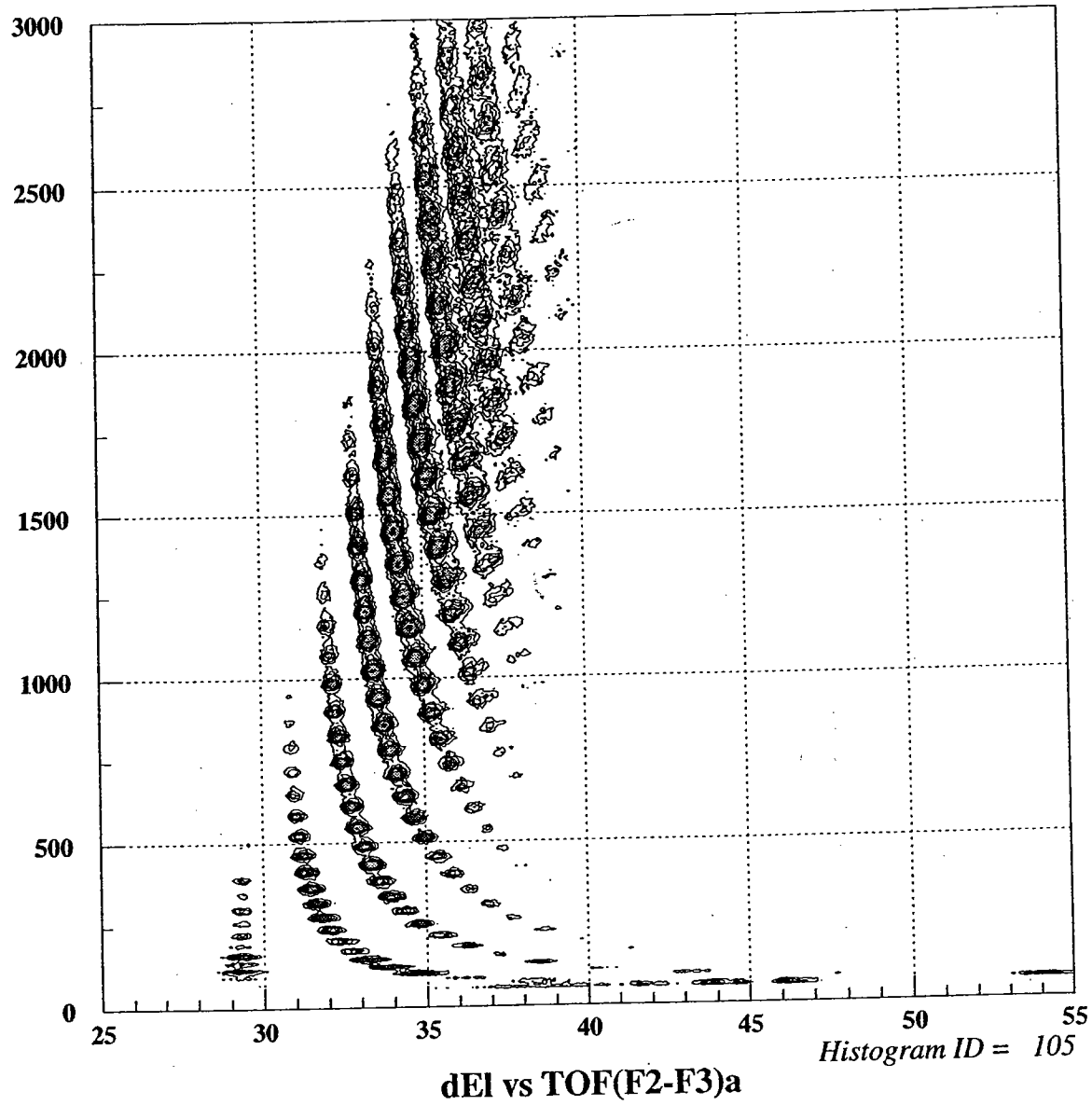
BP = 2.23 adjust 0.04% down

Ta(166) Tgt ~ 0.7 kcps

att RING $\frac{1}{2}$ LINAC $\frac{1}{10}$, $\frac{1}{3}$

Run 134 D1 = 608.590
D2 = 608.875

Run 134 Ta (166) BP = 2.19



Run 135 D1 = 608.613
D2 = 608.849
Run 136

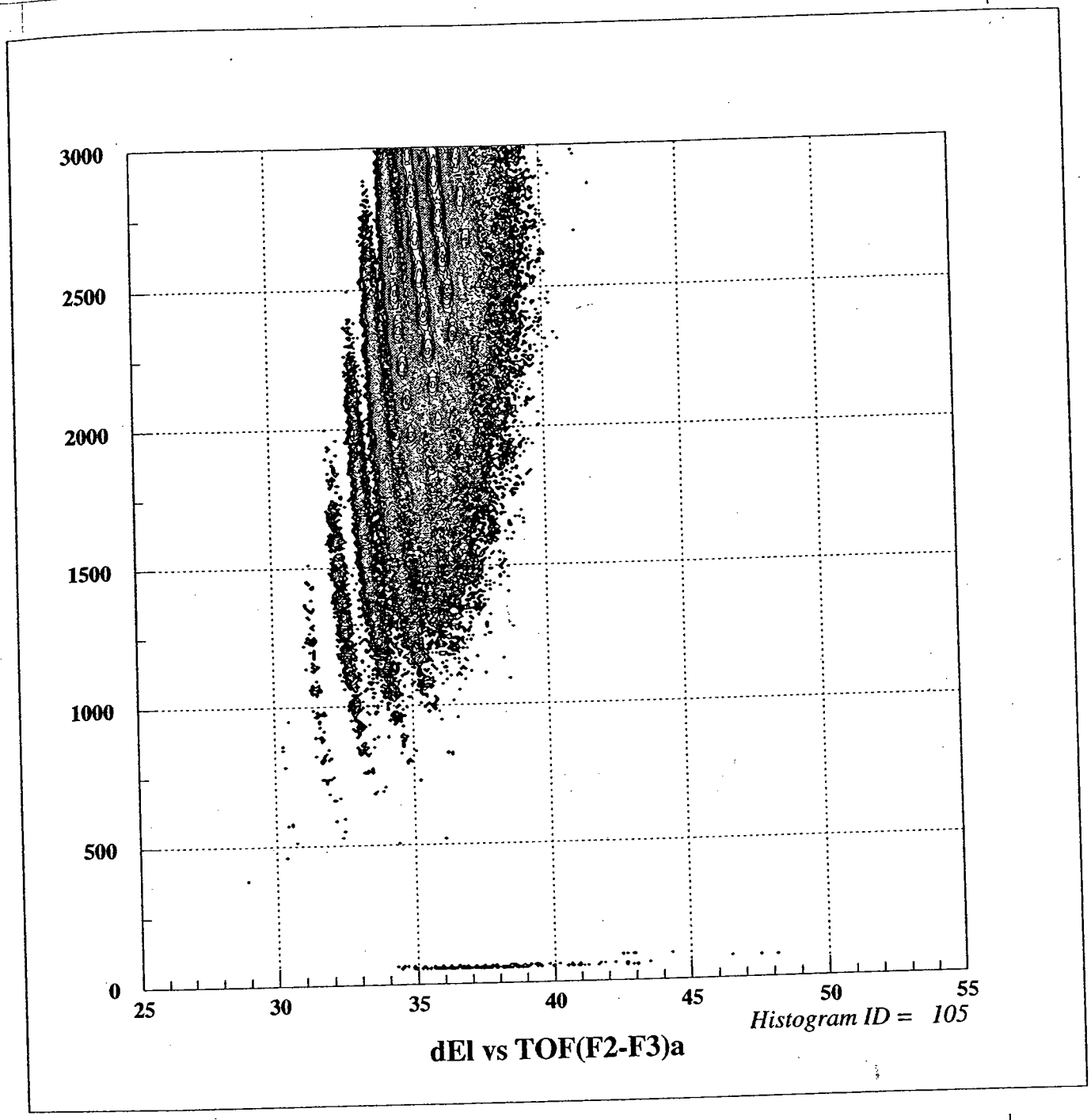
ANAPAW 死亡…。
Goes to heaven!

137

Run ~~136~~ ~~547~~

D1 = 614.121

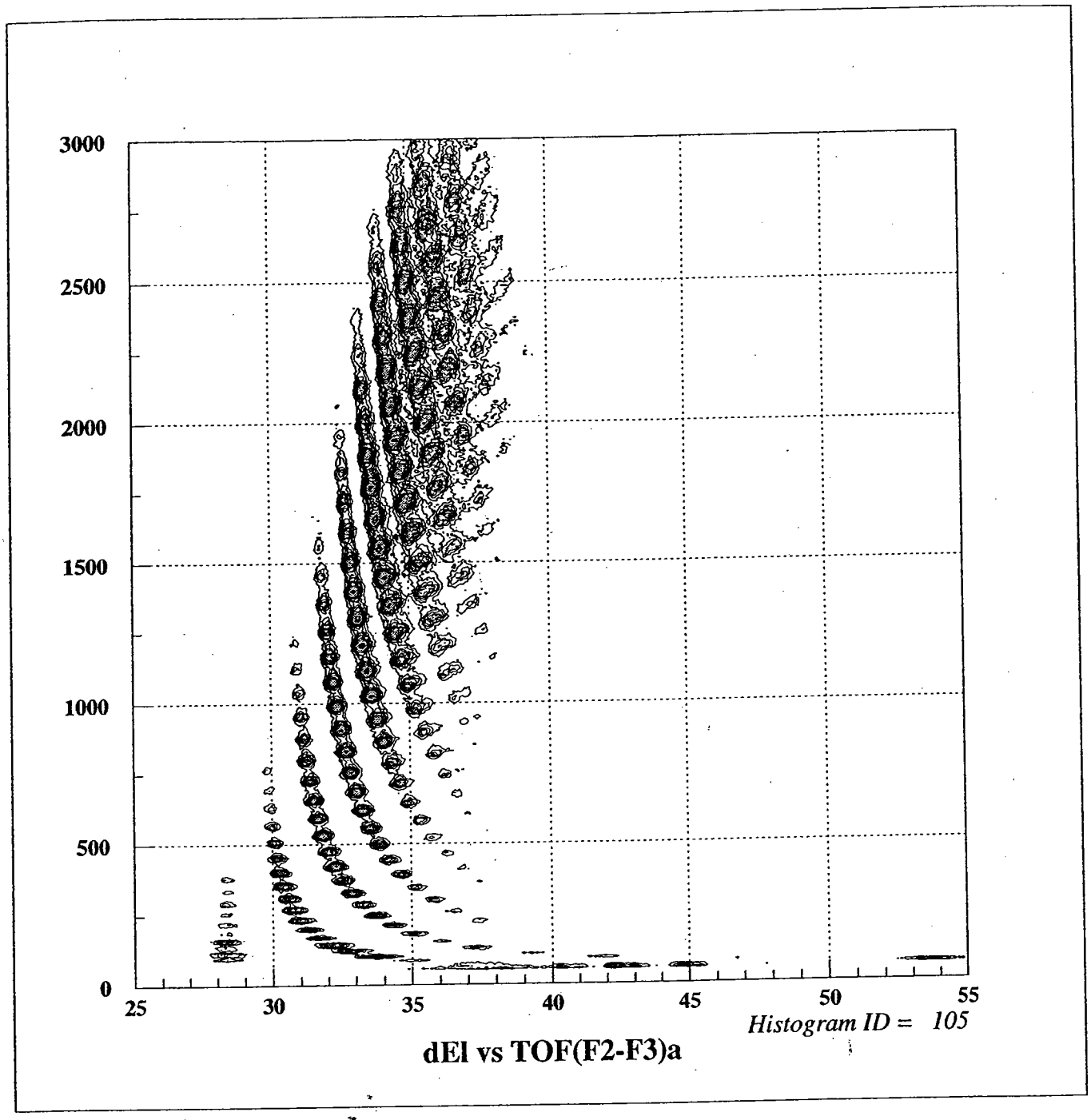
D2 = 619.407



Run 138 D1 : 614.109
D2 : 614.405

ANAPAW 死ぬ…。

Run 139 D1 = 619, 618
D2 = 619, 828



Run 140

BP = 2.23 ~ 0.61 kcps

Be (92)

att RING $\frac{1}{100}, \frac{1}{3}, \frac{1}{2}$ | LINAC $\frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

Run 141

BP = 2.25 adjust 0.03% down

Be (92)

att RING $\frac{1}{100}, \frac{1}{3}, \frac{1}{2}$ | LINAC $\frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

Run 142

BP = 2.25 ~ 0.6 kcps

Ta (166)

att RING $\frac{1}{10}$ | LINAC $\frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

Run 143

BP = 2.27 adjust 0.03% down

~ 0.7 kcps

Ta (166)

att RING $\frac{1}{10}$ | LINAC $\frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

Run 144

BP = 2.27

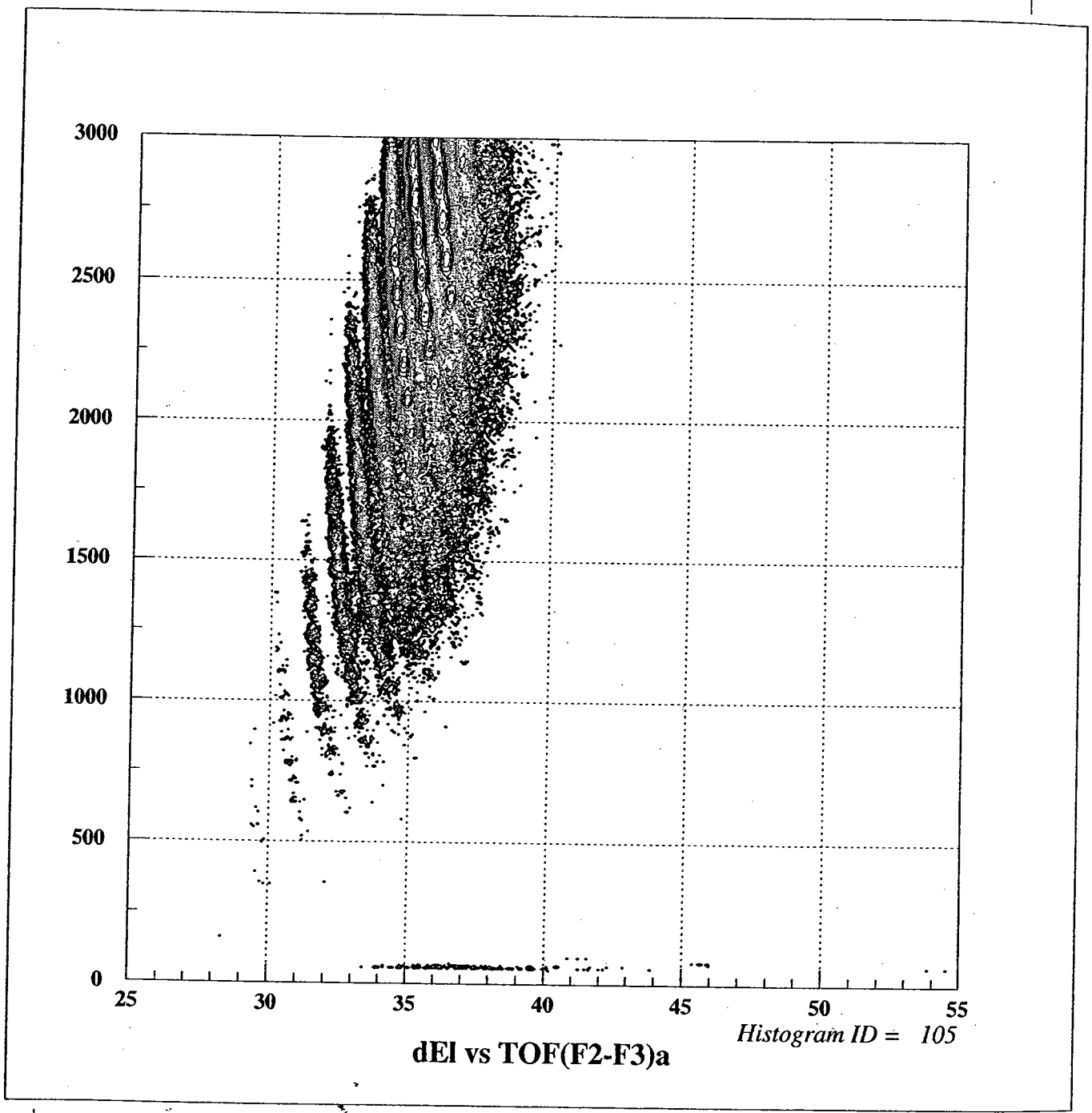
Be (92) ~ 0.7 kcps

att RING $\frac{1}{100}, \frac{1}{3}, \frac{1}{2}$ | LINAC $\frac{1}{10}, \frac{1}{3}, \frac{1}{2}$

Run 140 $D1 = 619.648$
$D2 = 619.825$

ANAPAW 실시

Run 141 D1 : 625, 199
D2 : 625, 414



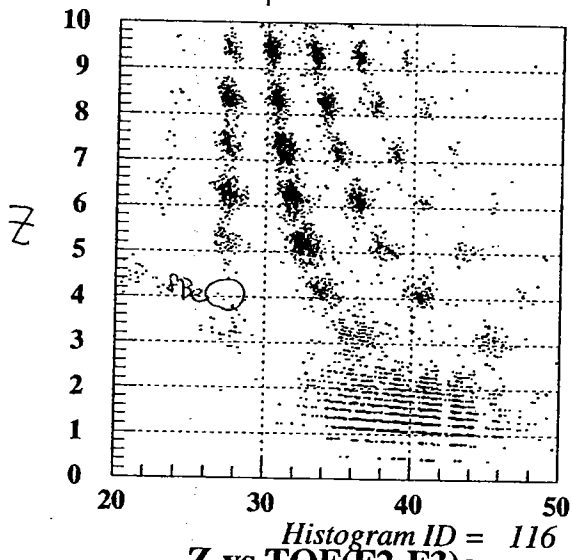
Run 142

D1 = 625.160
D2 = 625.415

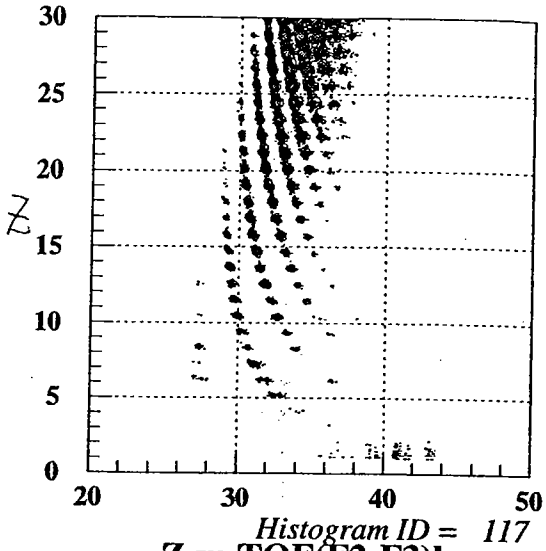
Run 143

D1 = 630.711
D2 = 630.873

pid.ana. run 143.



Z vs TOF(F2-F3)a



Z vs TOF(F2-F3)b

~600 cps

AH = 1/60 (LINAC)

× 1/100 × 1/3 × 1/2

= 1/36000

Full = ~~200~~ 160 mA @ RING

160 mA @ D61

BP = 2.05

FI = ± 2mm

AH = 1/100 4 Kcps @ F2 p/a

1/10 100 kcps

FI = ± 1mm.

1/10 40 Kcps

1 500 k cps

BP = 1.81

3k @ Full

FI ⇒ ±5mm

20k @ Full

150nA @ RIPS w/ target
(92mg Be)

Rm 145 Olanno Calib Be(90mg) Tg

Full Range = 0.3μA

~ 150enA

146 Back ground

No beam

147 No beam w/o FC.

Rm 145:

EC = 13965/28.1sec = 497cps

= 497 × 300/1000 = 149nA

monota = 242483/28.1sec = 8629cps

→ 149nA/8629cps = 0.0173nA/monota

4.8 × 10⁻⁴ pnA/monota

Okuno vs. PPIa - Calib. (10Hz elec trig)

Run	Att	
Run 148	Full	
149	Att = 1/2	~10 k
150	1/2 x 1/3	~ 3 k
151	1/10	~ 1.8 k
153	1/10 x 1/2	~ 1 k
154	1/10 Ⓐ x 1/2 x 1/3	~ 350 cps
155	1/10 Ⓑ x 1/3	~ 150
156	1/10 Ⓑ 1/3 x 1/2	~ 80
157	1/100 x 1/2 x 1/3	~ 40

F1 = 15mm

F1 = 150mm

158	1/100 x 1/2 x 1/3	~ 350
159	(1/100 x 1/2) x 1/2 x 1/3	~ 200
160	~~(1/3.2 x 1/10) x 1/2 x 1/100~~ (1/10) x 1/100	~ 150
161	(1/10) 1/100 1/2	~ 100
162	(1/10 x 1/3) 1/100 1/2	~ 35
163	no beam	
164	1/	

Run 165 D1 = 756.003. D2 = 756.530

- "Absolute" current calib. Retarget 92mg
- RIPS is set at 33+ state

- Att = 1/600 $\simeq \frac{150\text{nA}}{600} = 0.25\text{nA} = 7\times10^{-3}$ pnA
  $= 7\times10^{-6}$ μA
  $= 7\times10^{-6}\times 6\times10^{12} = 4\times10^{7}$ cps

1300 cps @ F2. (33+)

33+/36+. $\simeq 3\times10^{-5}$ (see P.37)

momota ~ 7.2 cps

$\#(36^+) = \frac{1300}{3\times10^{-5}} = 4.3\times10^{7}$ ok.

---

from scaler

momota = 10607/939 = 11.3 Hz
$= 5.4\times10^{-3}$ pnA
$= 3.2\times10^{7}$ cps at ter
$= (3.2\times10^{7})\times 3.1\times10^{-5}$ (33+)
= 990 cps 33+

F2 = 1054792/939
= 1123 cps. ×1.13. ok.

Run 166 Ta target

Run 1667 F2 PPAC discharge

1/10. × 1/6000

F2 PPAC alive

Run 168 1/3000

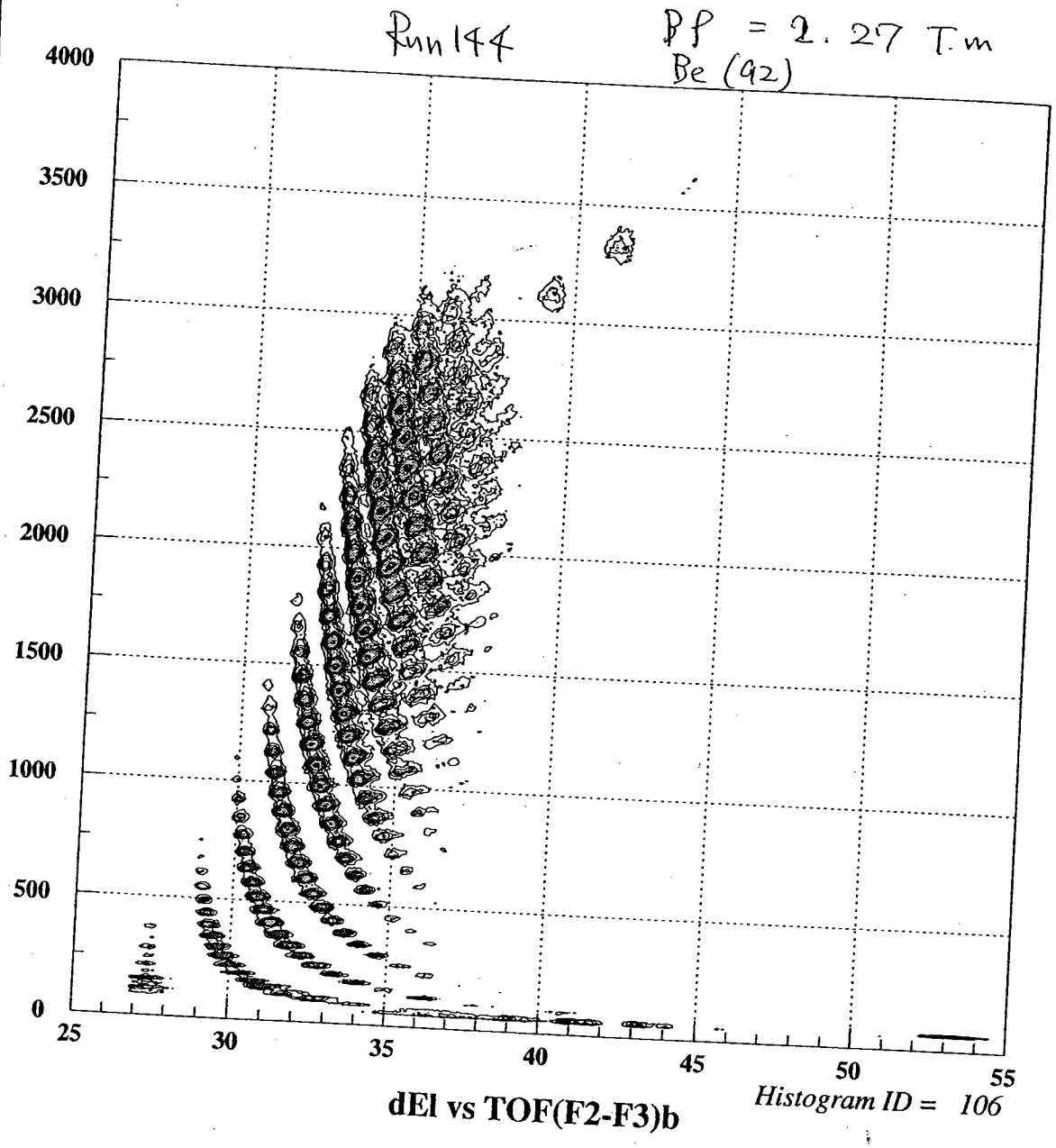
169 1/30000 F1 slit ±50 mm

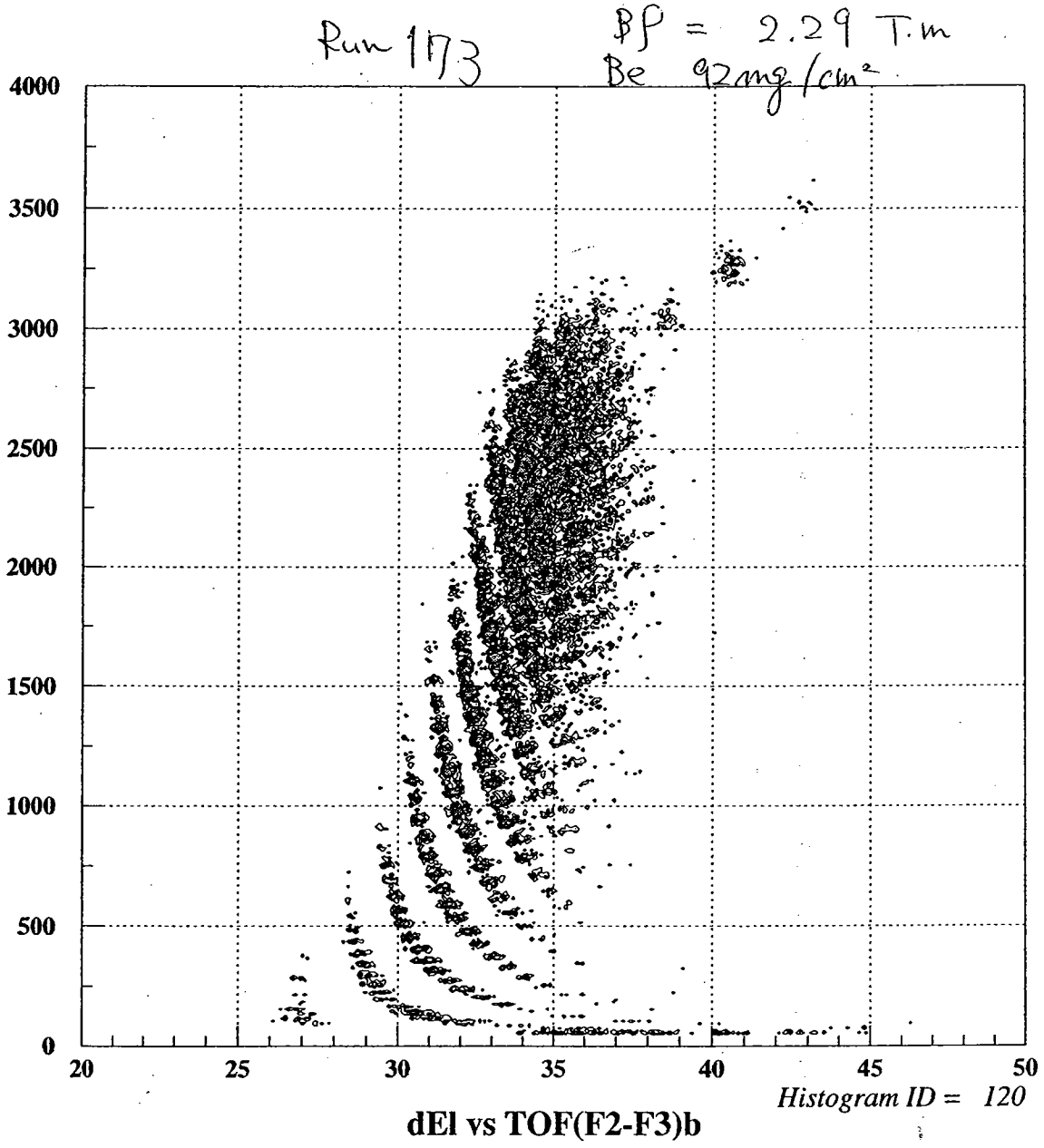
BP = 1.81

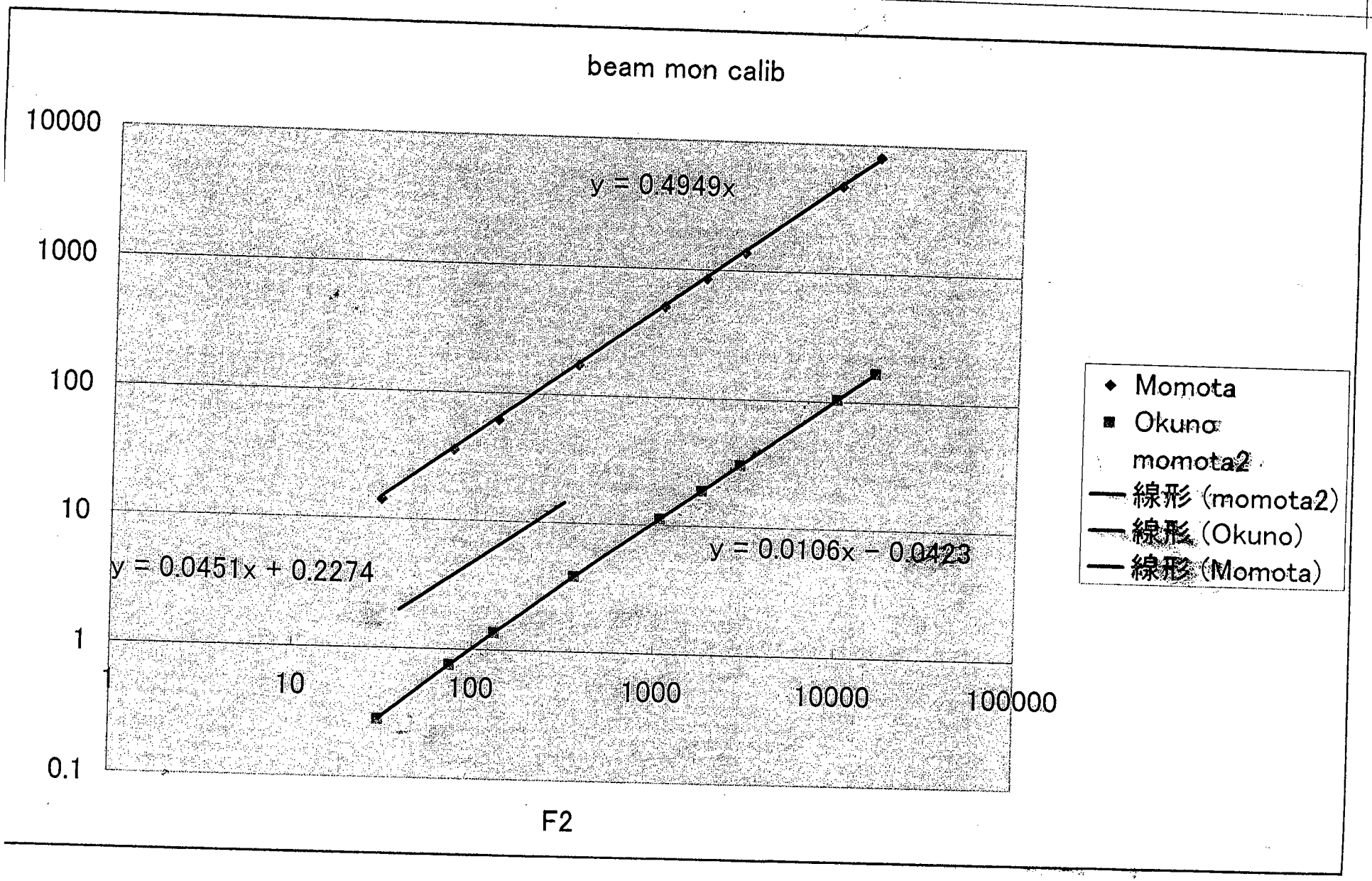
170 1/30000 " ±5

171 1/20 " ±5

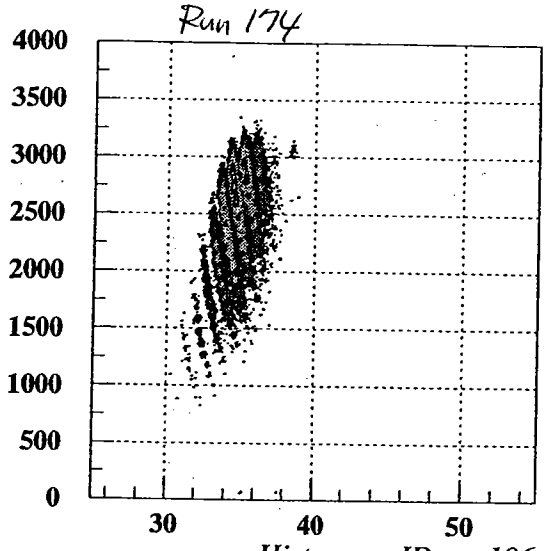
172 1/2


Run 144
Bp = 2.27 T.m
Be (92)
4000
3500
3000
2500
2000
1500
1000
500
0
25
30
35
40
45
50
55
dEl vs TOF(F2-F3)b
Histogram ID = 106


Run 173
Bρ = 2.29 T·m
Be 92 mg/cm²
4000
3500
3000
2500
2000
1500
1000
500
0
20
25
30
35
40
45
50
Histogram ID = 120
dEl vs TOF(F2-F3)b


beam mon calib
10000
1000
100
10
1
0.1
y = 0.4949x
y = 0.0451x + 0.2274
y = 0.0106x - 0.0423
10
100
1000
10000
100000
F2
Momota
Okuno
momota2
線形 (momota2)
線形 (Okuno)
線形 (Momota)

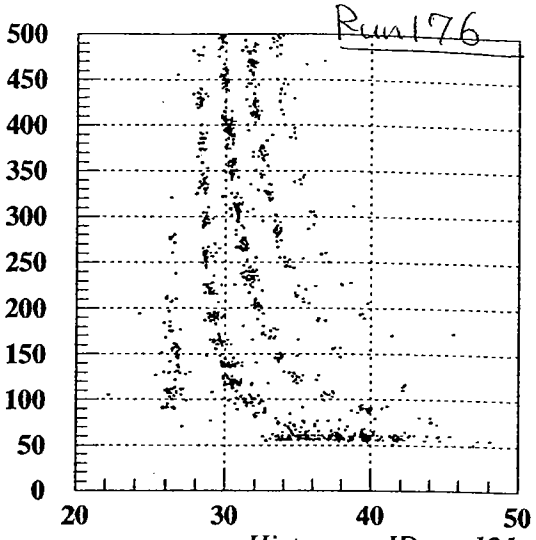
Run 174



Histogram ID = 106

dEl vs TOF(F2-F3)b

Run 176



Histogram ID = 121

dEl vs TOF(F2-F3)a

Be (92 mg/cm²) target

D1 = 642.076 mT

D2 = 642.490 mT

Ta (166) target

RUN 177

Bρ = 2.33 , Ta Target , att = $\frac{1}{1000}$

MT change

$\times \frac{1}{10}$

RUN 178

Bρ = 2.33 , Be Target , att = $\frac{1}{10,000}$

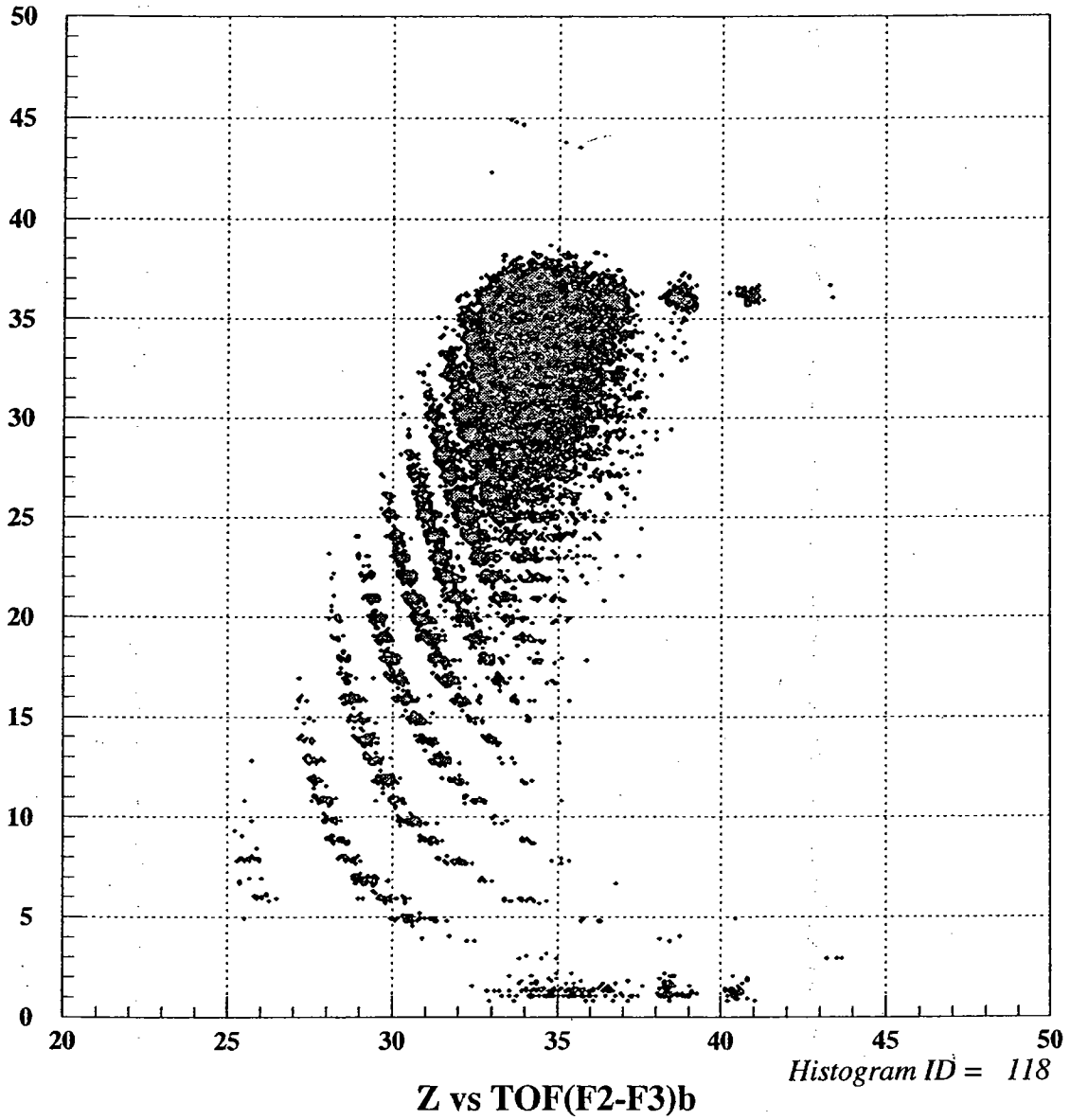
RUN 179

Bρ = 2.35 , Be Target , att = $\frac{1}{10,000}$

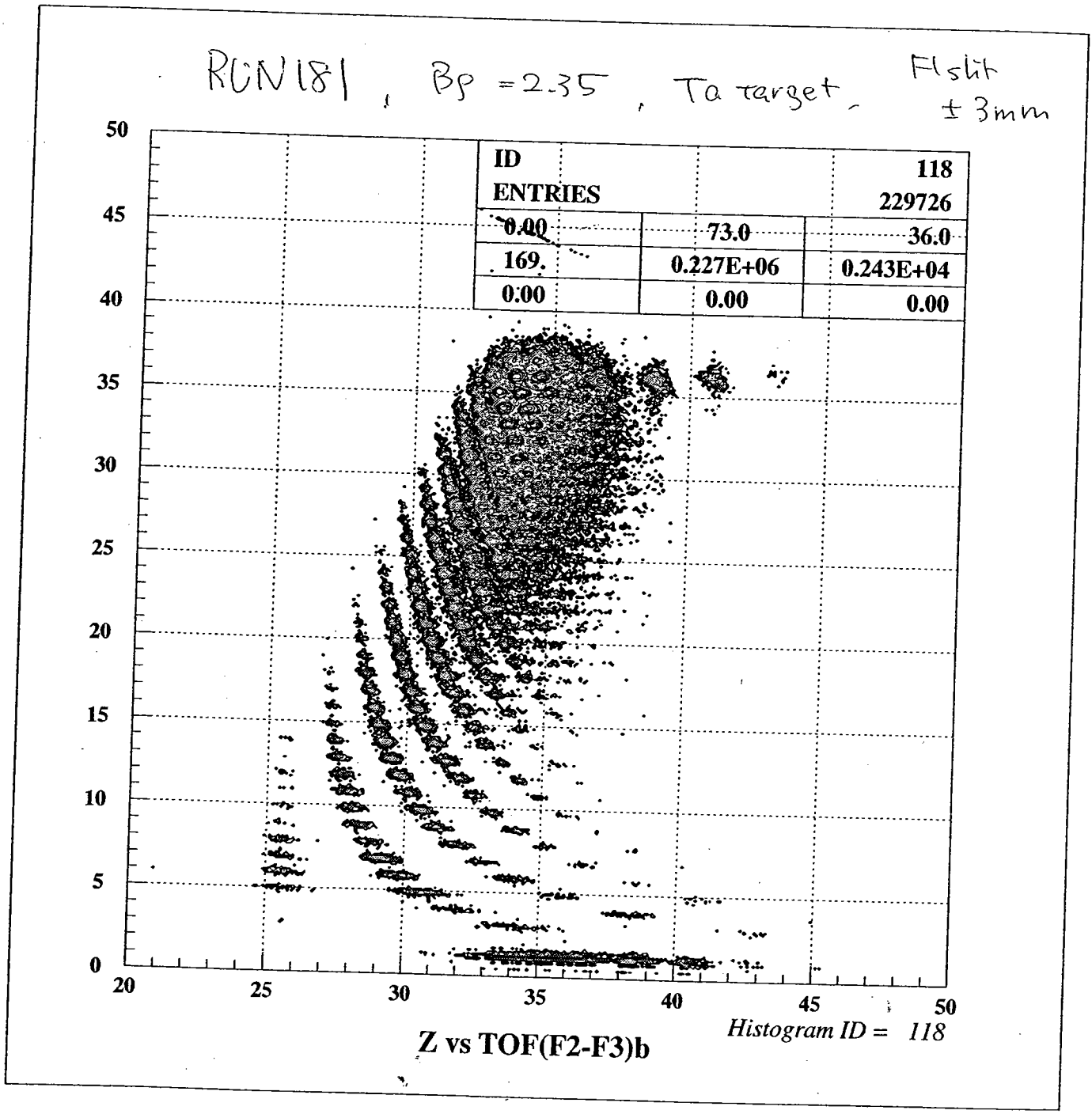
RUN180

Bρ = 2.35 , Ta target , att = $\frac{1}{100}$

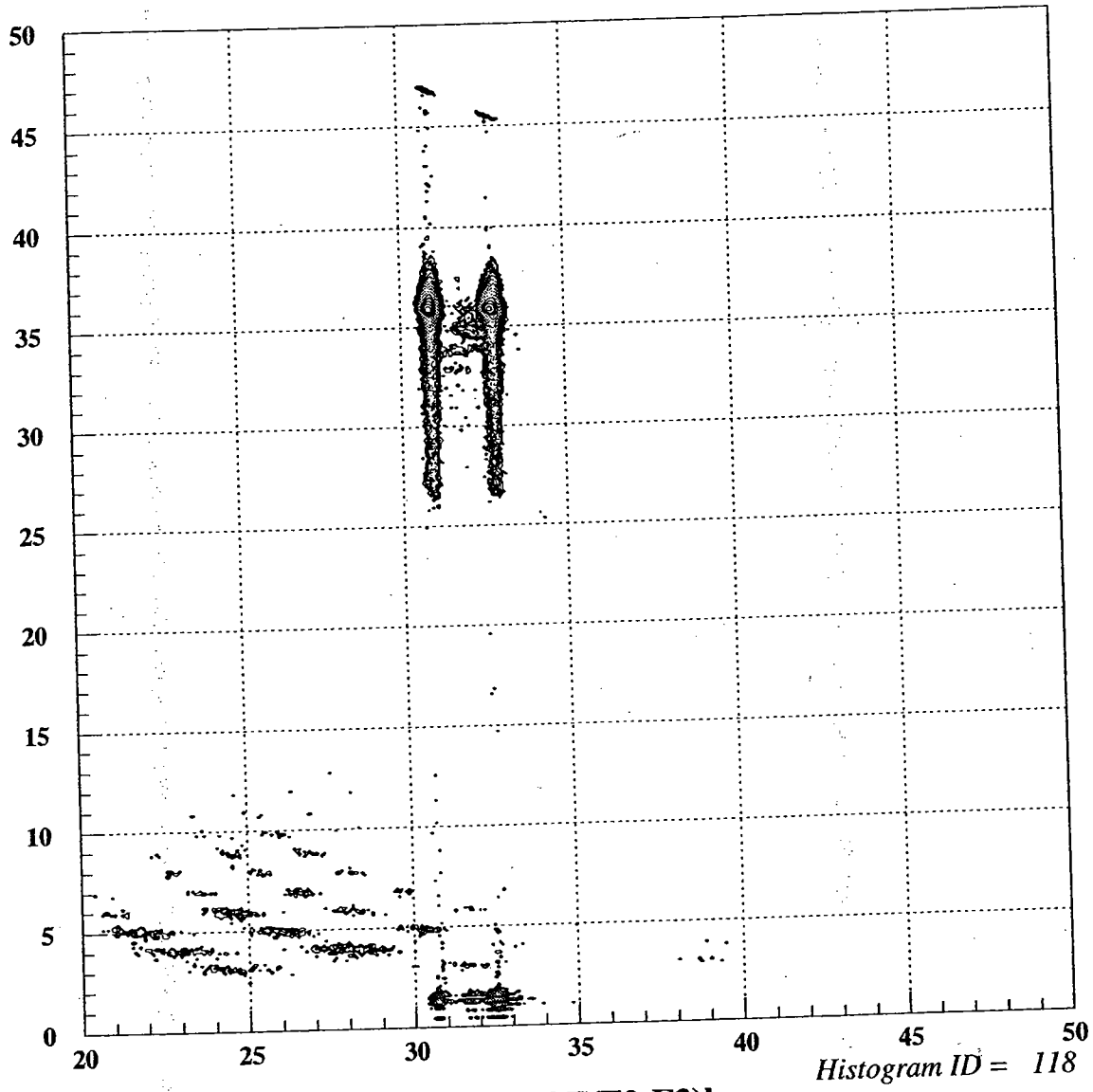
RUN #180, Bρ = 2.35, Ta target Al slit ±5mm



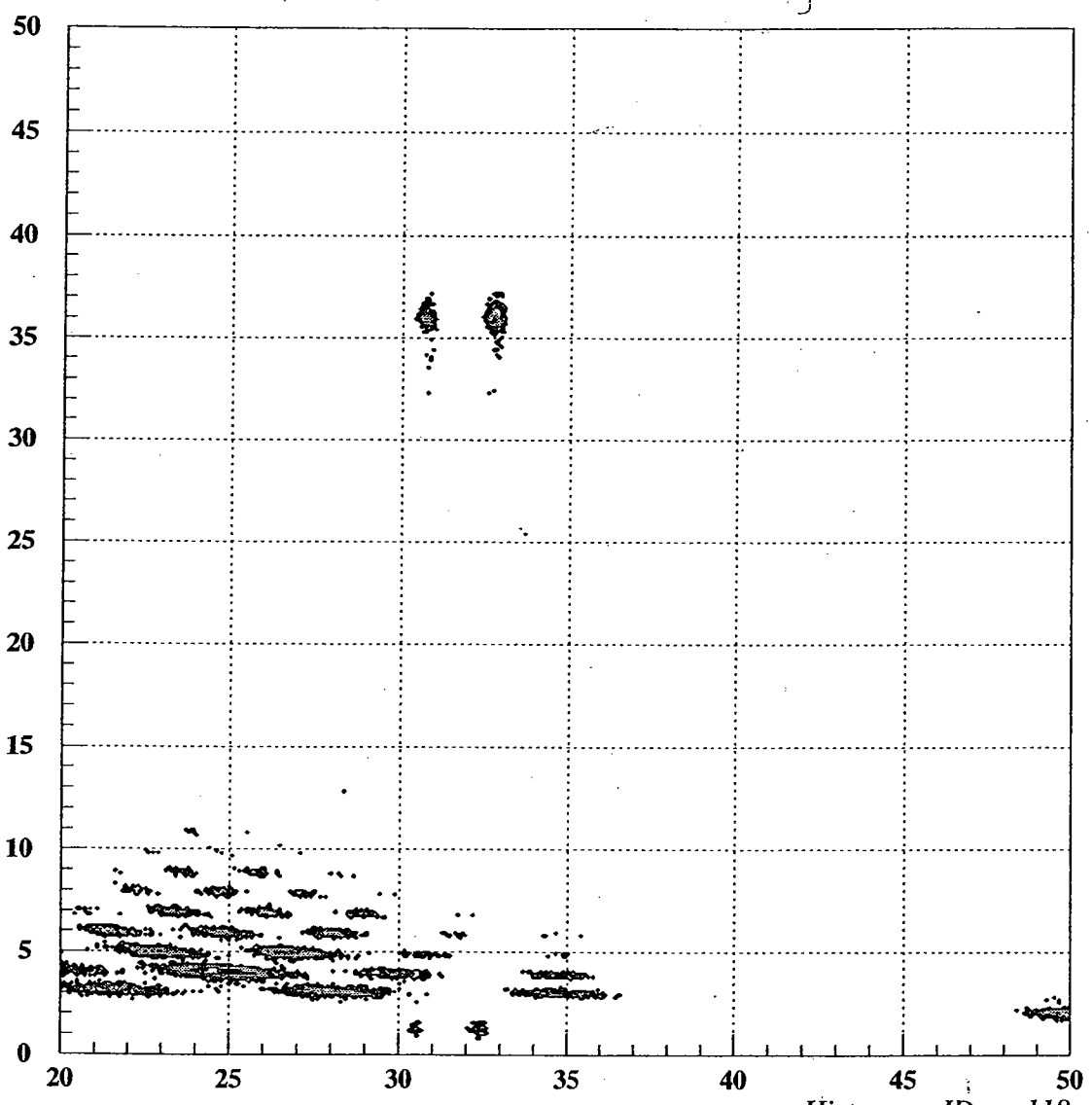
157
T5C6


RUN181, Bp = 2.35, Ta target, F1 slit ± 3mm
ID 118
ENTRIES 229726
0.00 73.0 36.0
169. 0.227E+06 0.243E+04
0.00 0.00 0.00
50
45
40
35
30
25
20
15
10
5
0
20
25
30
35
40
45
50
Z vs TOF(F2-F3)b
Histogram ID = 118

RUN 182, Bρ = 2.80, Ta target, A slit = 3mm

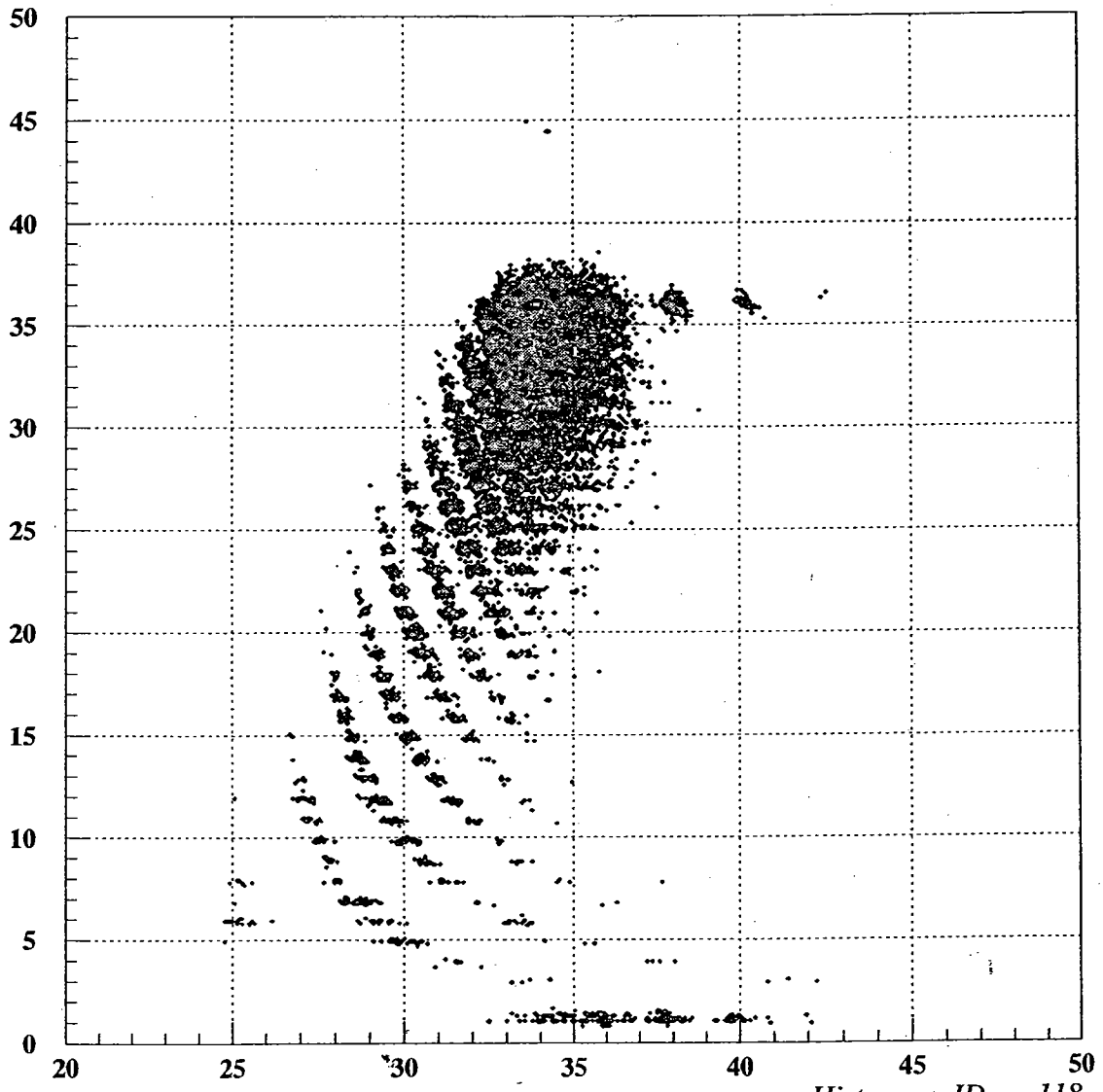


RUN 183, Bp = 2.99. Ta target, F1 slit 13mm



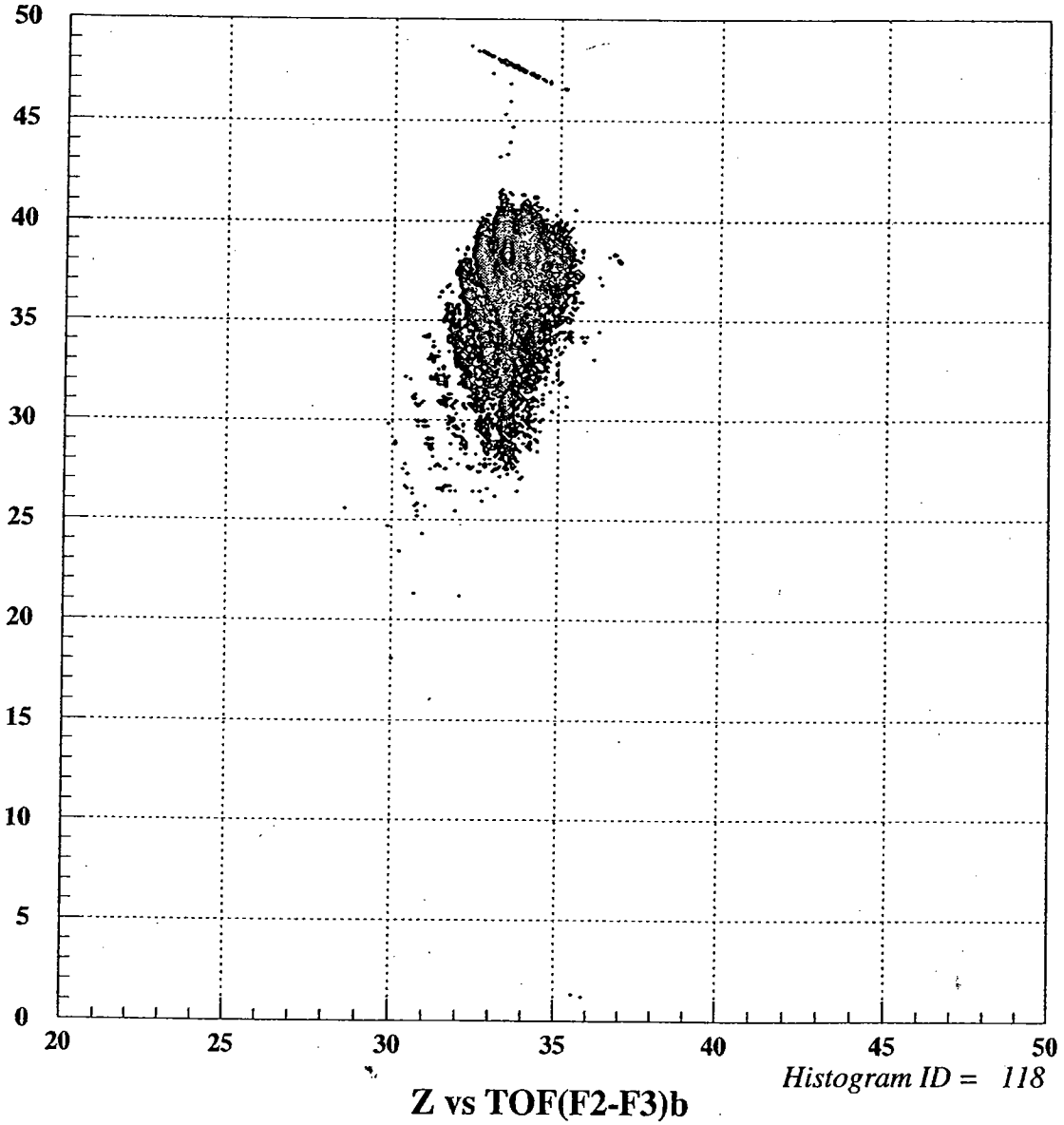
RUN 183
att. ~~full~~, 0
(full beam)

RUN 184. Bρ = 2.37, Ta target

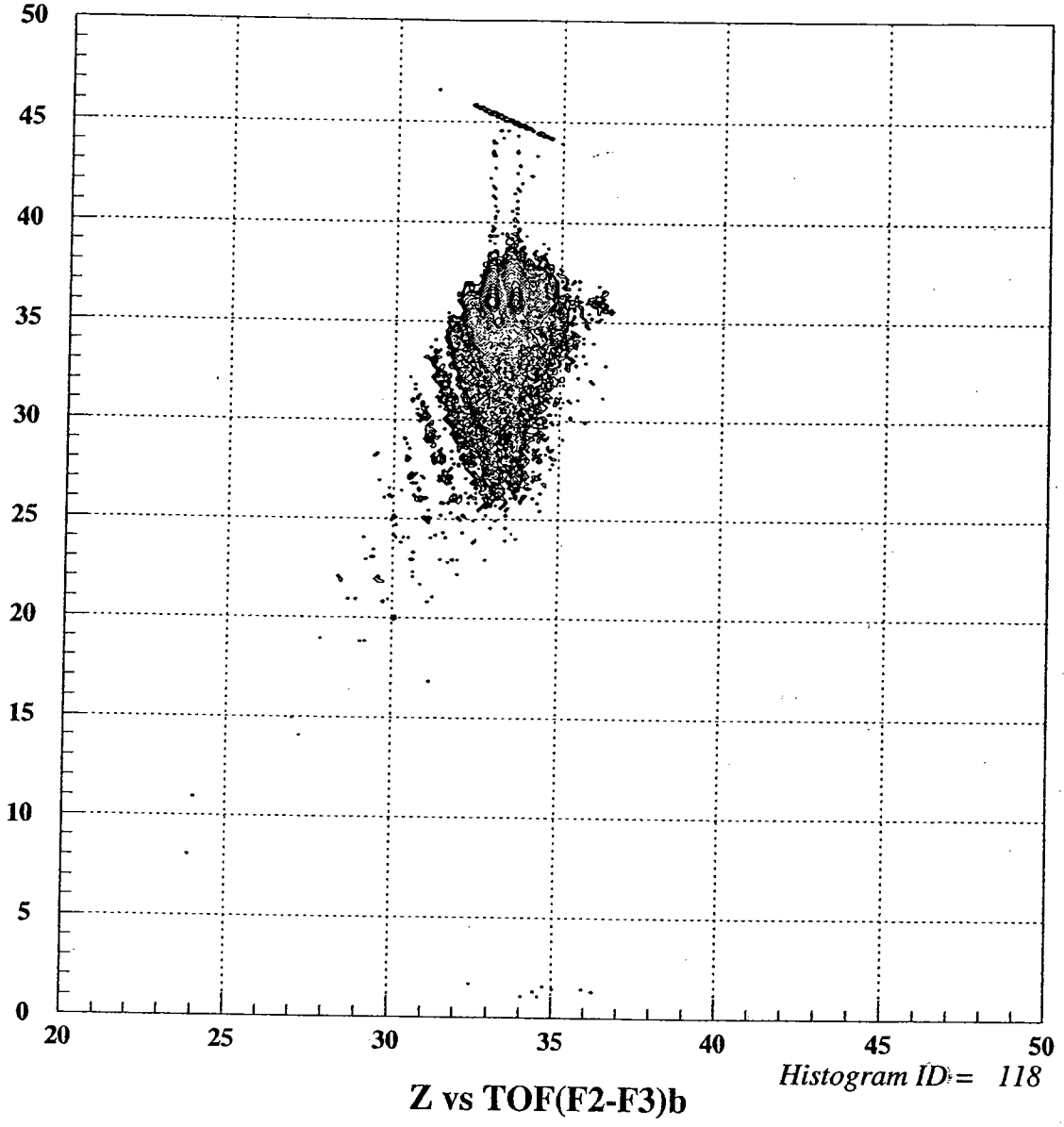


161

RUN 187, Bρ = 2.41, Be target.

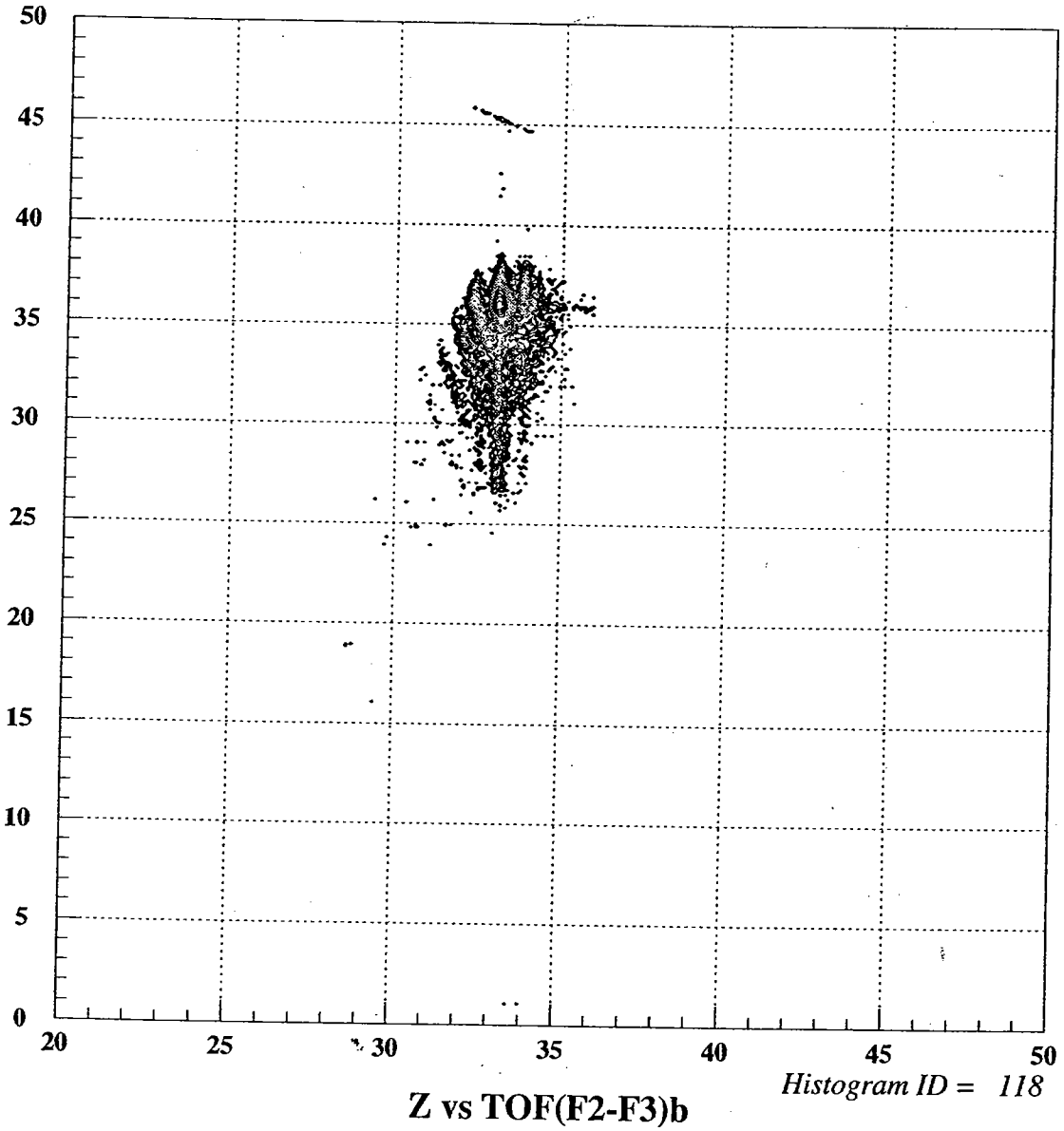


RUN 188 . Bρ = 2.93. Be target

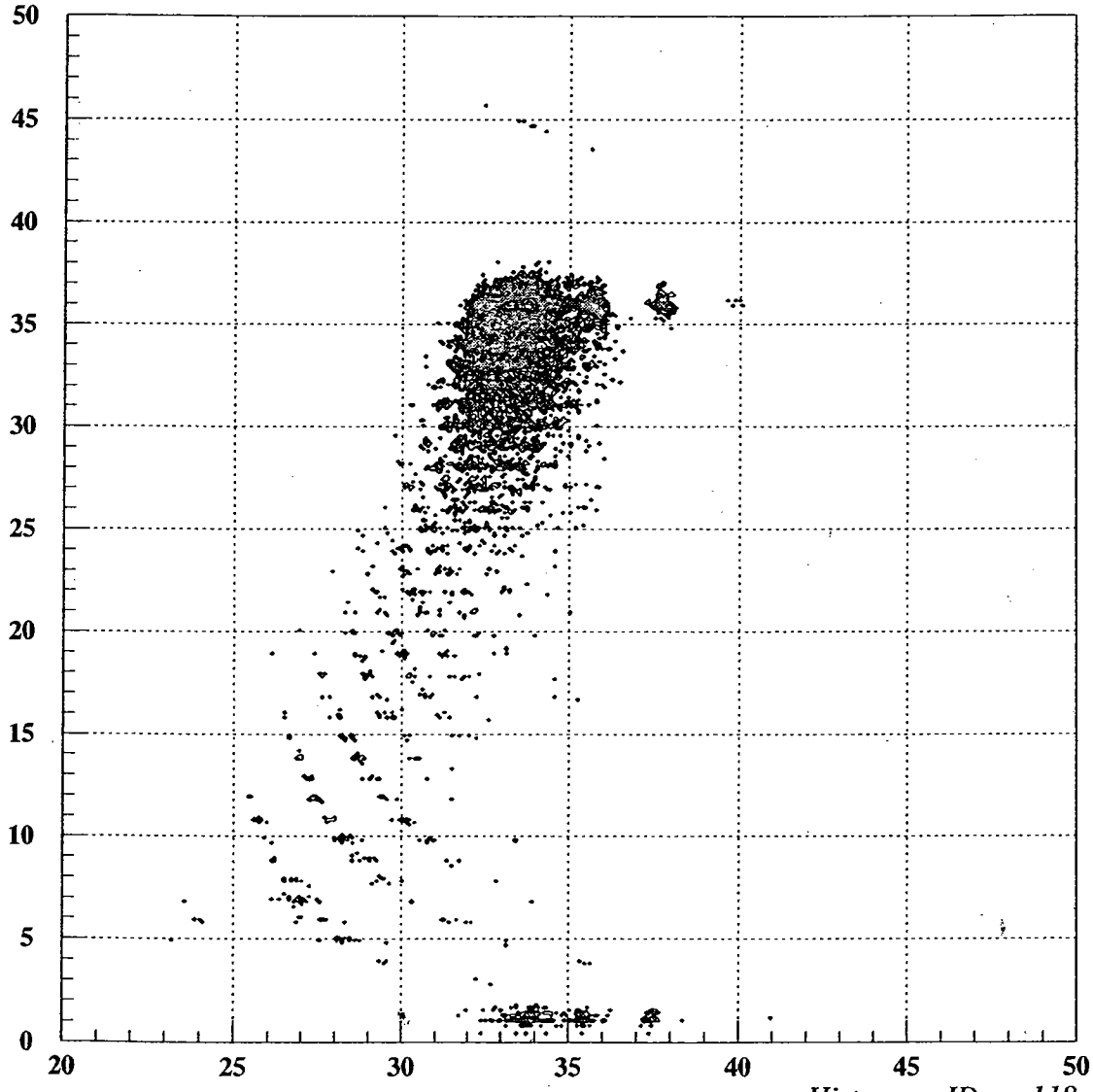


He3

RUN 189, Bp = 2.45, Be

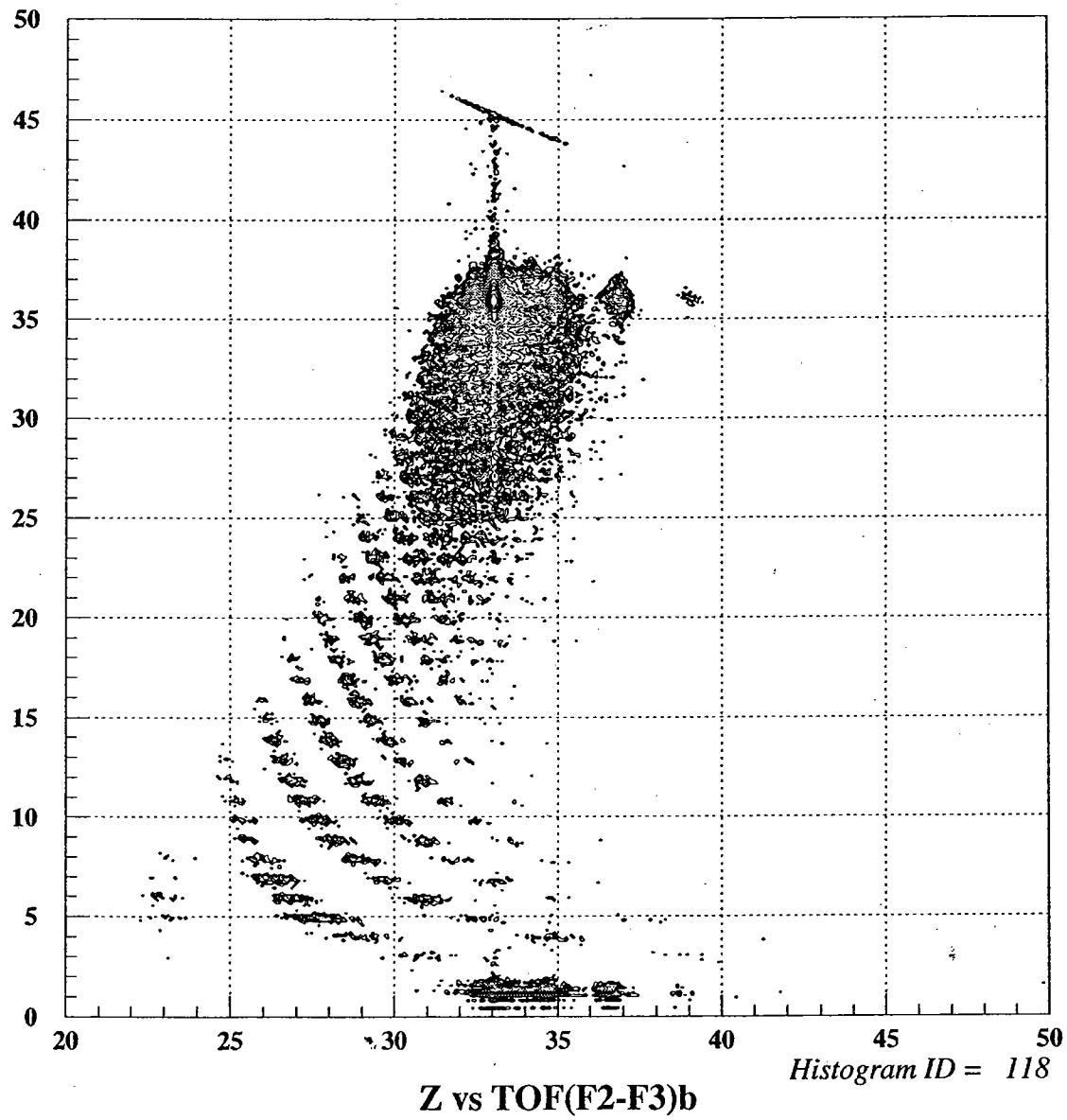


RUN 190 , Bρ = 2.95 , Ta



RUN 191, Bp = 2.48. Ta.

2004/06/07 08.07



Z vs TOF(F2-F3)b

BP = 2.67

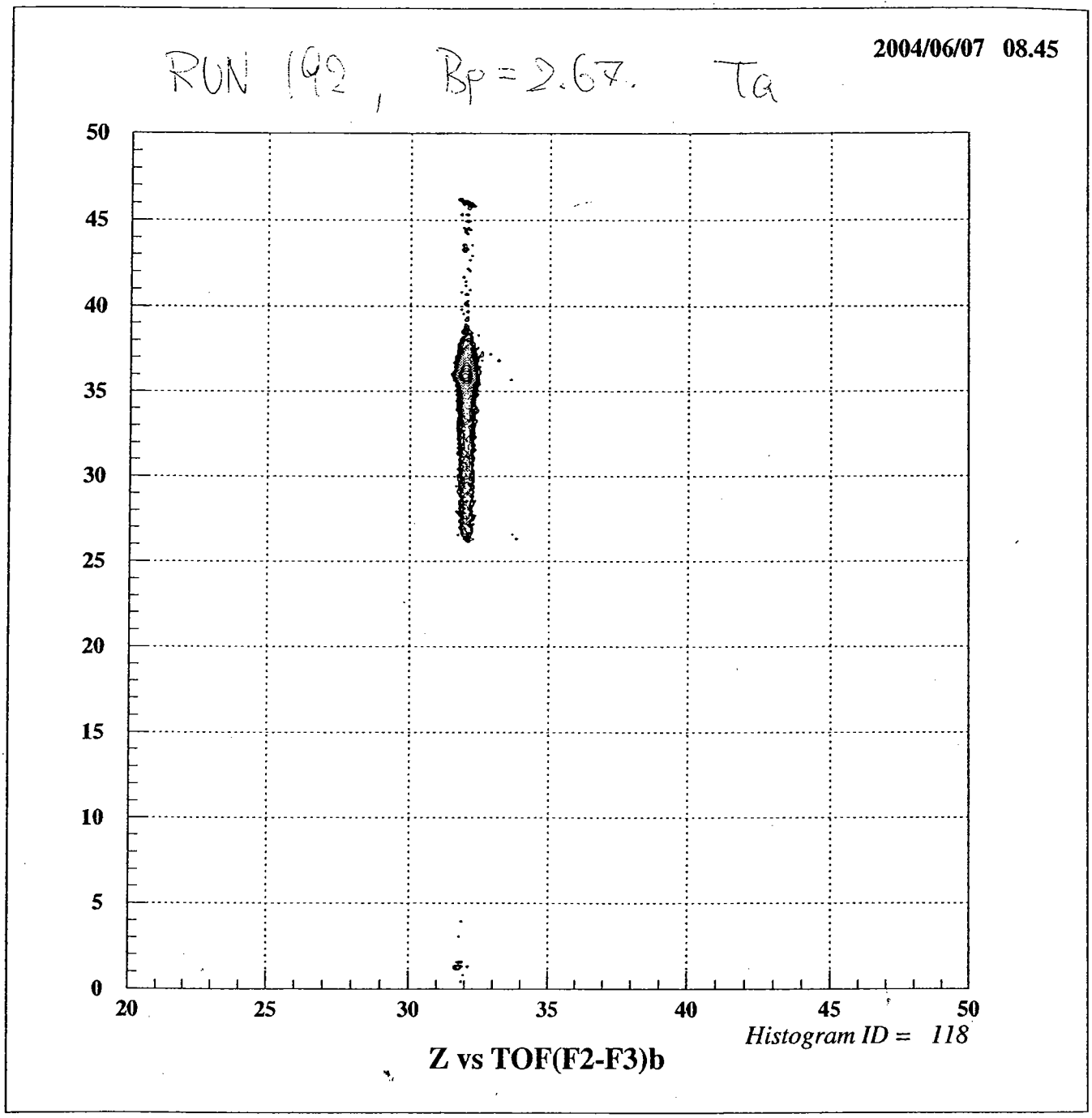
AP = (1/30) x 1/2 x 1/3

60

↓

(1/60) x 1/10 x 1/100

1 kps @ P2.

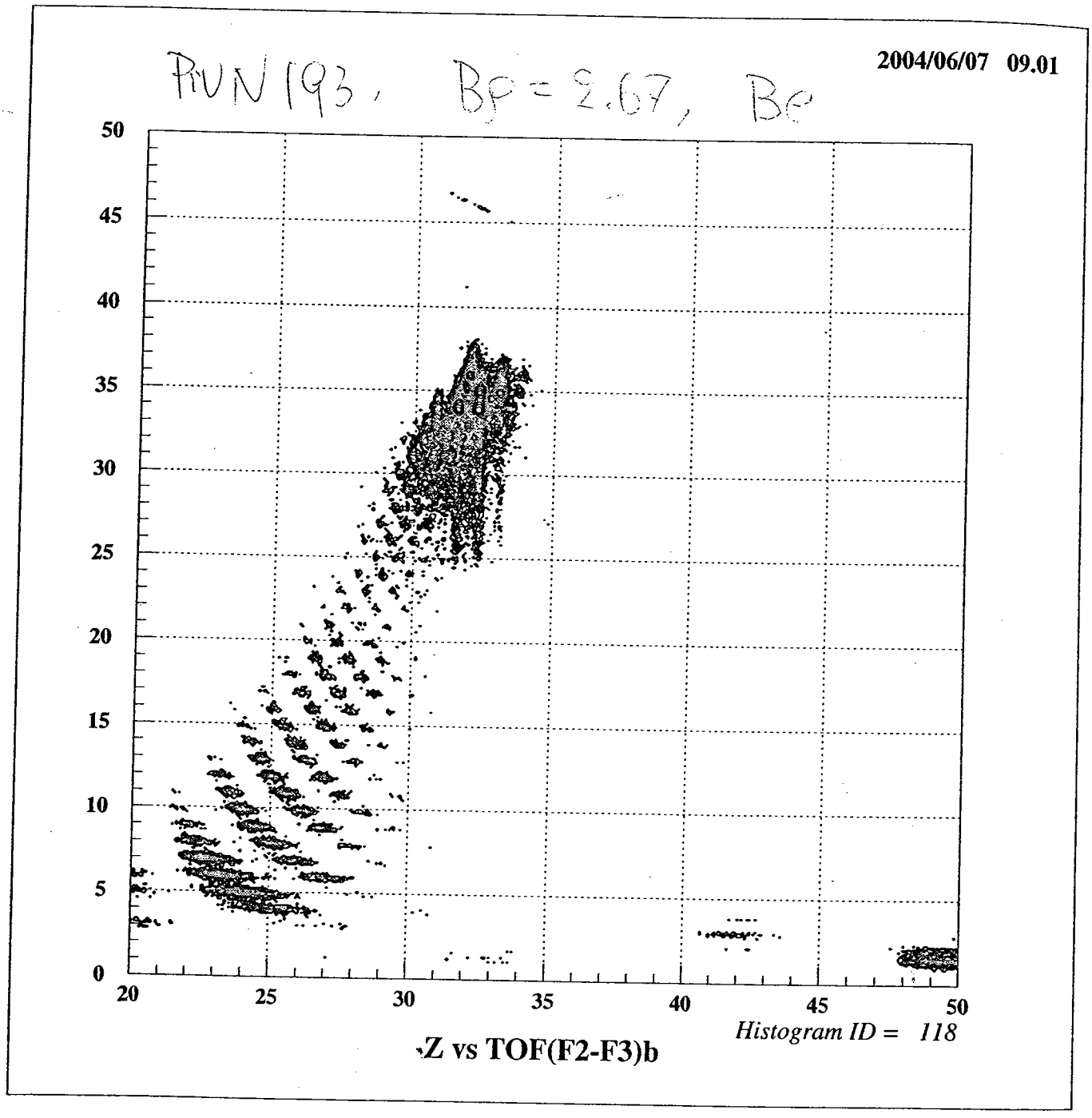

2004/06/07 08.45
RUN 192, Bp = 2.67. Ta
50
45
40
35
30
25
20
15
10
5
0
20
25
30
35
40
45
50
Histogram ID = 118
Z vs TOF(F2-F3)b

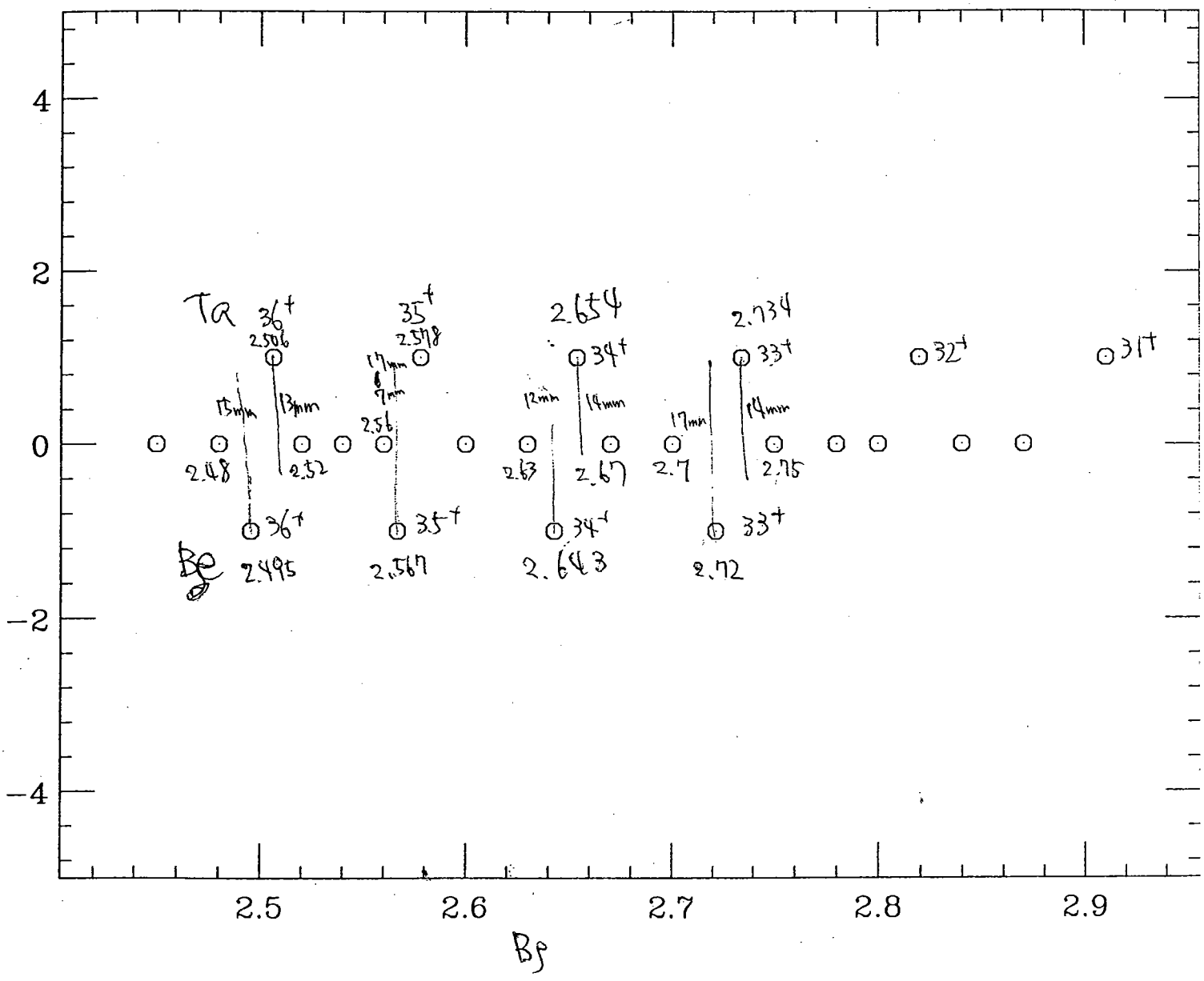
BP = 2.67 Be Targ.

LINAC 1/2

RRC 1/2 x 1/3

~600 cps @ 72.


RUN 193, Bp = 2.67, Be
2004/06/07 09.01
50
45
40
35
30
25
20
15
10
5
0
20
25
30
35
40
45
50
Histogram ID = 118
Z vs TOF(F2-F3)b


TQ
36+
2.506
35+
2.578
2.654
2.734
34+
33+
32+
31+
15mm
13mm
17mm
7mm
2.56
12mm
14mm
17mm
14mm
2.48
2.52
2.63
2.67
2.7
2.75
36+
35+
34+
33+
Be
2.495
2.567
2.643
2.72
4
2
0
−2
−4
2.5
2.6
2.7
2.8
2.9
Bρ

Run 194

Bρ = 2.700

Be (92mg) Target

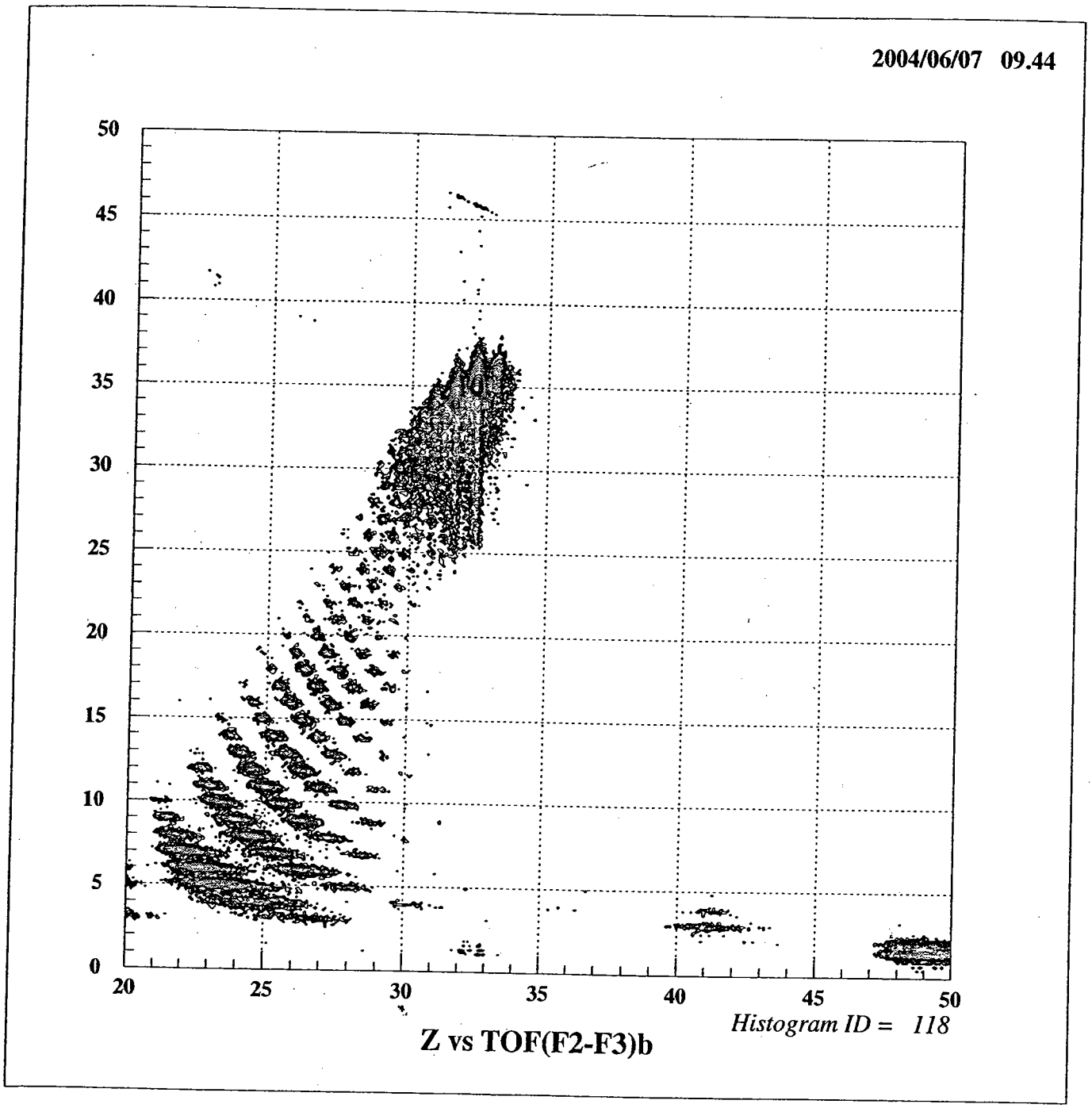
Att = 1/2 (LINAC)

1/3 (RRC)

700 cps @ F2.

Run 193. 194

F2 pl LE : disconnected.


2004/06/07 09.44
50
45
40
35
30
25
20
15
10
5
0
20
25
30
35
40
45
50
Histogram ID = 118
Z vs TOF(F2-F3)b

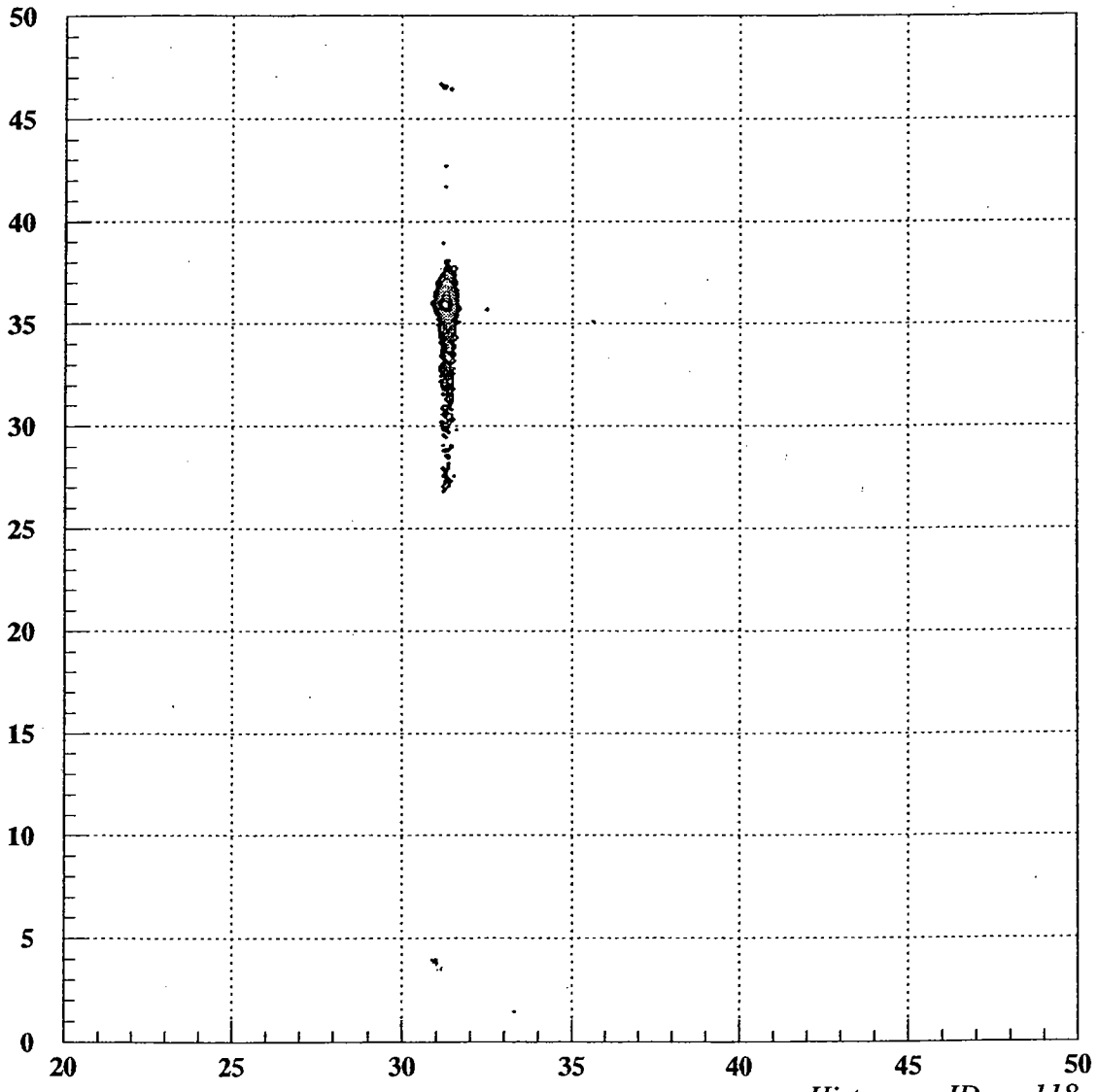
Run 195
Bρ = 2.70
Ta target
LINAC (1/20)
RRC (1/300)
700 cps @ F2

GV (F2 upstream) closed
← stop run

Run 196
same setting

2004/06/07 10.30

Run 195



Histogram ID = 118

Z vs TOF(F2-F3)b

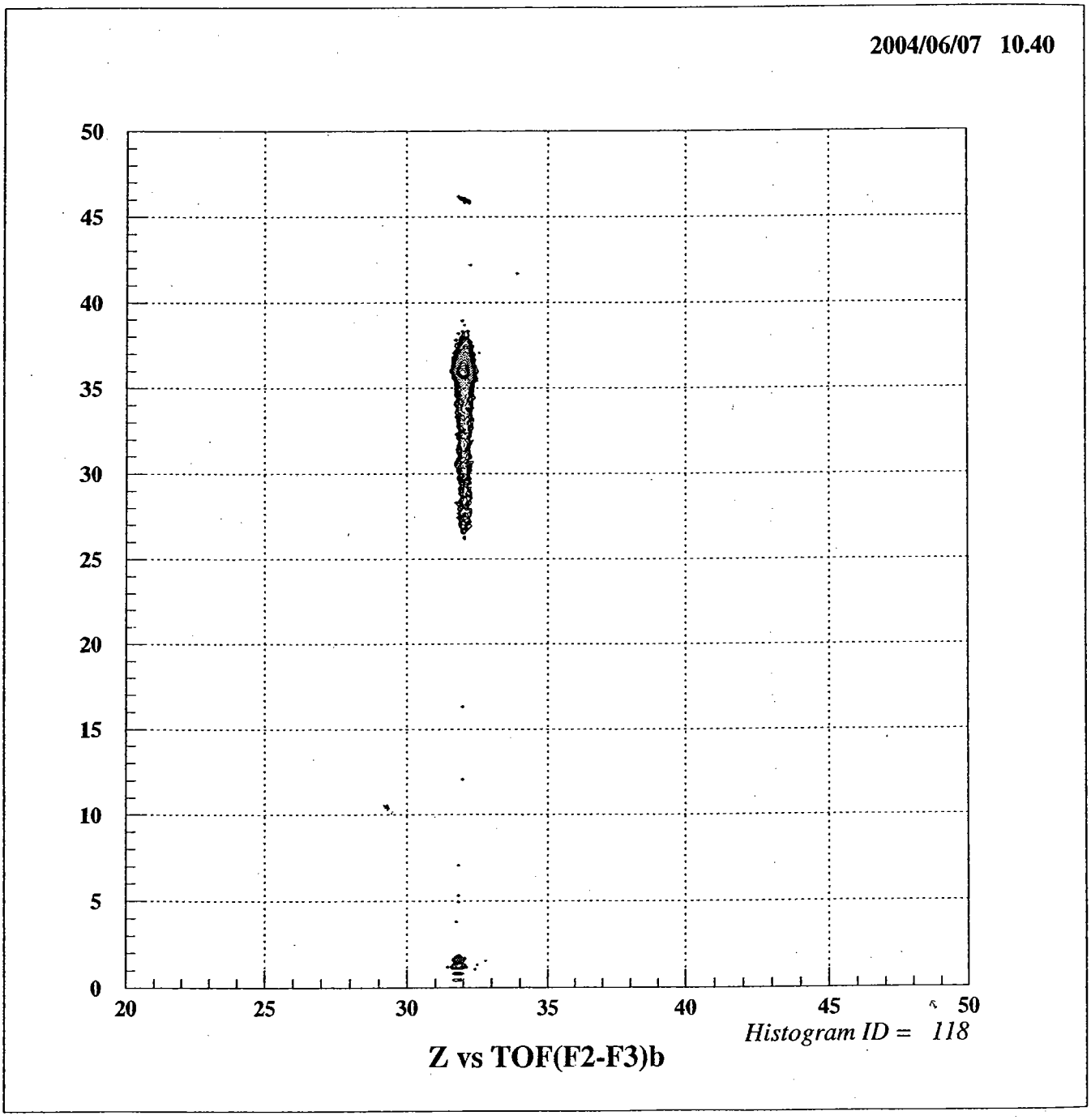
Rlm (97)

Bρ = 2.75

Target : Ta

LINAC 1/100 x 1/2

RRC : 1/100 x 1/3 x 1/2 700 cps @ F2



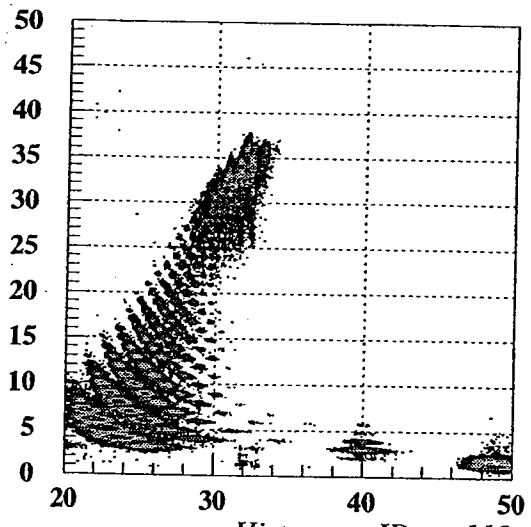
Run 198

$B\rho = 2.75$

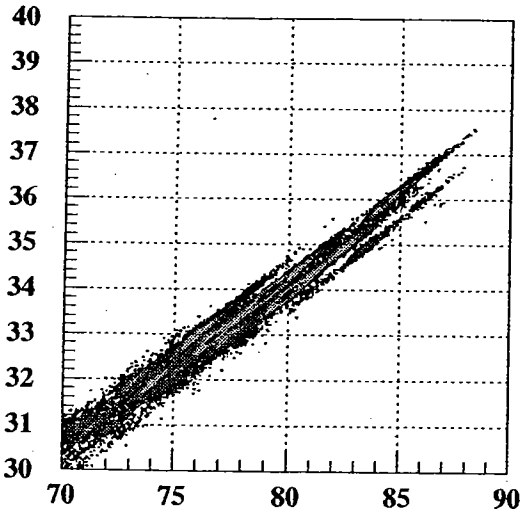
Be Target

Full Beam 1kcps @F2.

~120 enA @D61



Z vs TOF(F2-F3)b



Z vs A

(Run 199.)

Bρ = 2.33

Be (92mg) Target

Att = 1/100 (L) × 1/10 (R)

900 cps @ F2.

F1 = ± 3mm

momota ~ 0.2 cps

- Repeat Run 178 (see p.155) with narrower F1 because the momota rate is too low (out of range we have calibration
- still too low

close slit.

Rim ~~200~~ 199

Bρ = 2.33

Be(92) Target

F1 = 12mm

1/10 (L) x 1/10 x 1/2 x 1/3 (R)

~1.2kcps @ F2

momoto ~ 3cps

Run 200

Bρ = 2.23

Be (92mg)

Aft = 1/10 x 1/2 x 1/3 (L)

1/10 x 1/2 (R)

Fl = ± 2mm

~ 800 cps @ F2.

momota ~ 1.8 cps

Run 201

Bρ = 2.19

Be (92mg)

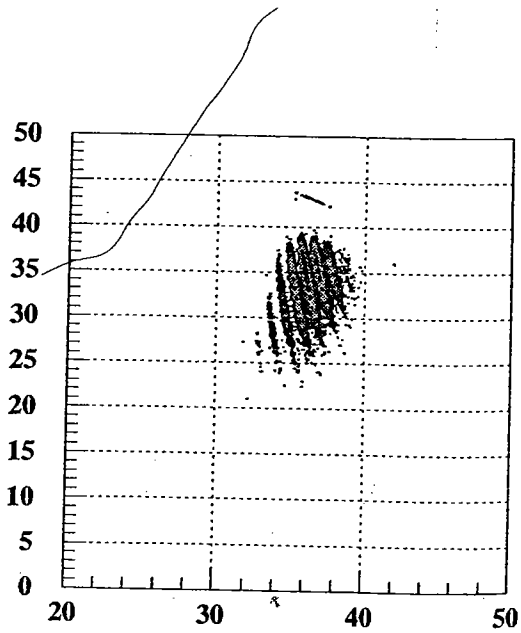
Aft = 1/10 x 1/2 x 1/3

1/10 x 1/2 (R)

Fl = ± 2mm

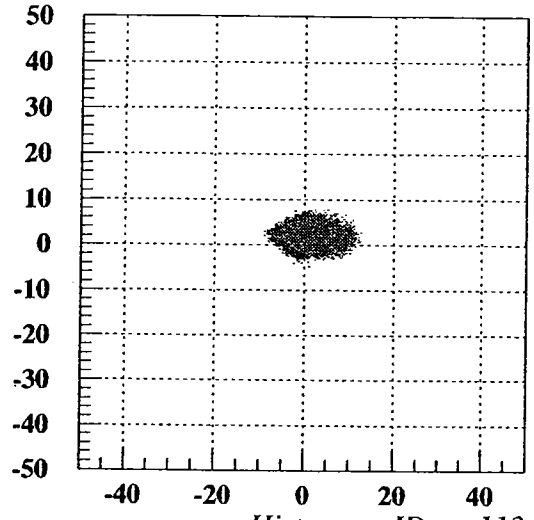
~ 1k cps @ F2

momota ~ 2 cps



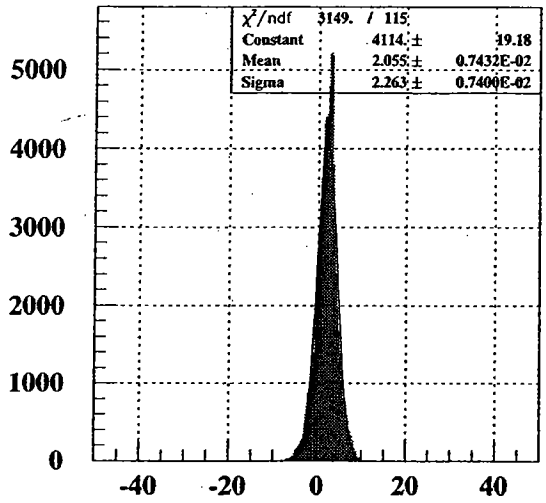
Histogram ID = 118

Z vs TOF(F2-F3)b



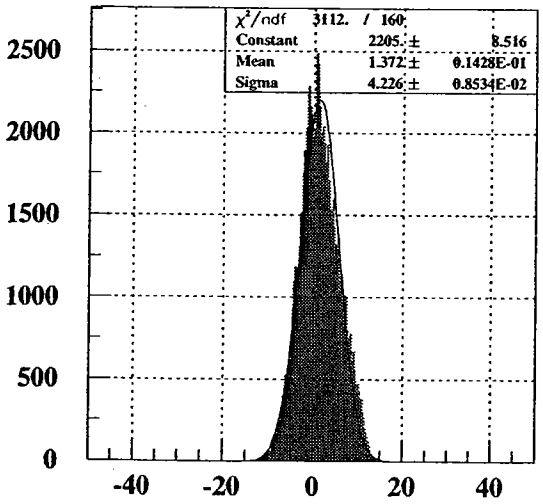
Histogram ID = 113

pc2 xy



Histogram ID = 132

Proy.(pc2 xy)



Histogram ID = 131

Prox.(pc2 xy)

· F2 spot size is reasonable

transmission F2→F3
= 99.8%

See P.87

Run 202

Bρ = 2.15

Be

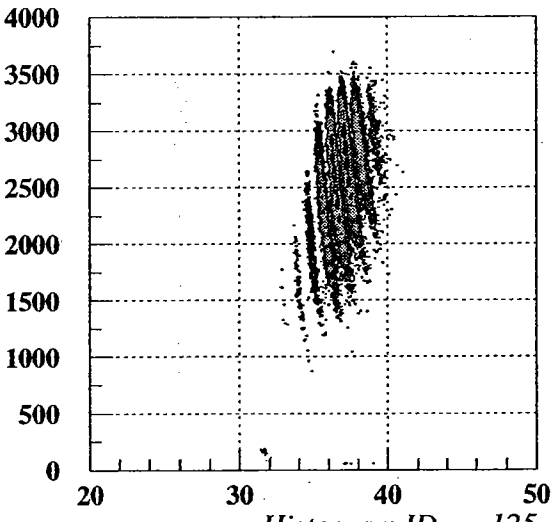
Aft = 1/10 x 1/3 x 1/2 (L)

1/10 (R)

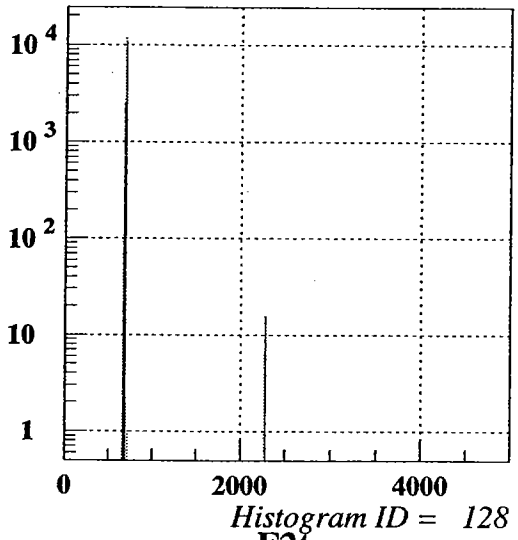
Fl = 12mm

1.1 kcps @ f2.

2.6 cps momota

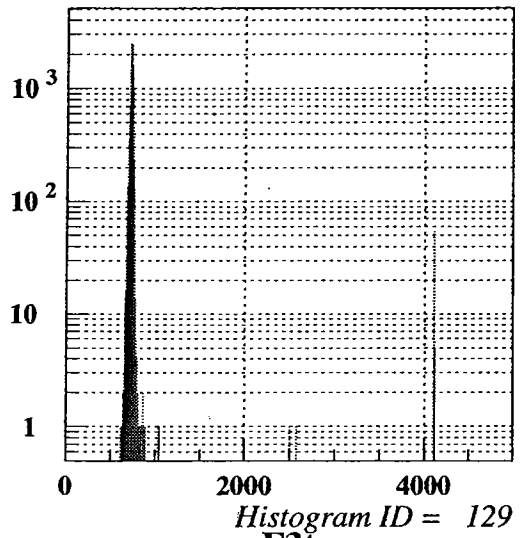


transmission ~ 100%



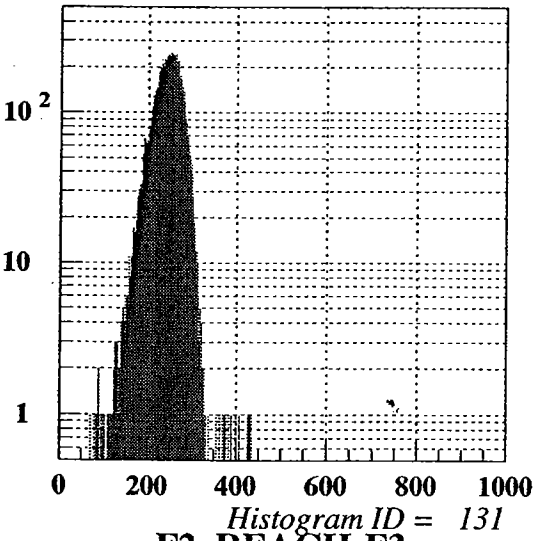
Histogram ID = 128

F2t



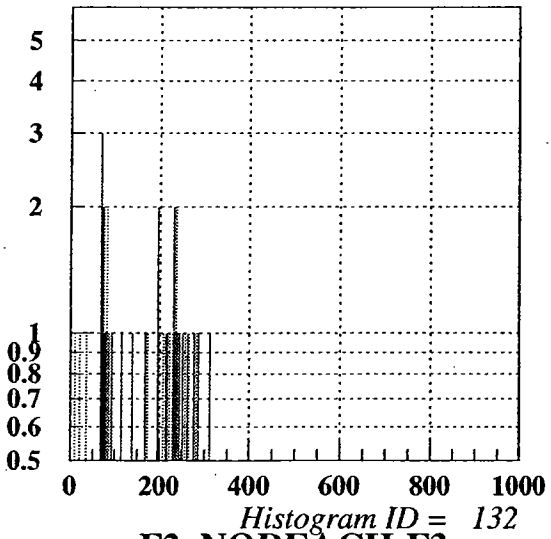
Histogram ID = 129

F3t



Histogram ID = 131

F2aREACH-F3



Histogram ID = 132

F2aNOREACH-F3

13:00 Ask for beam tuning

D6 = 120 nA ≈ 4 pnA (30t)

RIPS = 95 nA (w/ Be 92mg tgt)
= 2.6 pnA (36t)

65%

17 = 25

Run 189 ~ 202 (DAT #18)'s data is in the disk.

⇓

So, we send these data to

ripsOO.hqq.

⇓

Then we are going to send these data to another machine & tape

Run 189 ~ 196 ⇒ DAT #18

Run 197 ~ 203 ⇒ DAT #19

⇑

$$\frac{RIPS}{D6T} = \frac{50\ \mu A}{51\ \mu A} \sim 98\%.$$

Full Beam D61 2.56 μA

↓

85 pnA

RIPS 83 pnA

Please Profile Monitor's Figure here.

Att. $\frac{1}{100}, \frac{1}{10}, \frac{1}{2}, \frac{1}{3}$ (RRC)

$\frac{1}{100}, \frac{1}{3}$ (LINAC)

RIPS Control Summary

2004/06/07 20:24:31

	Parameter	Set Curr.	Read Curr.
Q1	1.3167	136.6141	136.499
Q2	1.5337	109.0360	107.740
Q3	0.7725	103.5041	103.595
SX1	0.0000	0.1469	0.000
D1	0.2777	324.0248	326.412
SX2	0.0000	0.1469	0.000
Q4	0.5572	56.3079	56.275
Q5	0.7942	70.5115	70.681
Q6	0.6197	62.8027	63.030
SX3	0.0000	0.1469	0.000
D2	0.2777	336.7841	336.339
SX4	0.0000	0.1469	0.000
Q7	0.6468	86.6411	87.174
Q8	1.1259	90.4144	90.882
Q9	1.0222	105.8330	106.024
Q10	1.1110	121.5689	123.024
Q11	1.4205	133.4212	132.069
Q12	1.1106	121.5250	122.357

Focus Brho TA-F1 2.0974 Tm

F1-F2 2.0974 Tm F2-F3 2.0974 Tm

Target

Tgt 128.5 mm
FC Out
Up 24.0 mm
Dwn 24.0 mm
Rgt 24.0 mm
Lft 23.8 mm
Lgt

F1

D1 119.9 mm
Id -134.9 mm
Rgt 3.0 mm
Lft 2.9 mm
Mom Out
Deg Exp
PPAC Out
Rot 0 deg.

F2

FC Out
Rgt 50.1 mm
Lft 50.0 mm
PPAC
SSD -94.7 mm
Deg Out -4.9 deg.
Pla IN

F3

PPAC1 IN
Rgt 49.9 mm
Lft 50.0 mm
PPAC2 IN
SSD Out
Pla IN
Lgt

Update exit

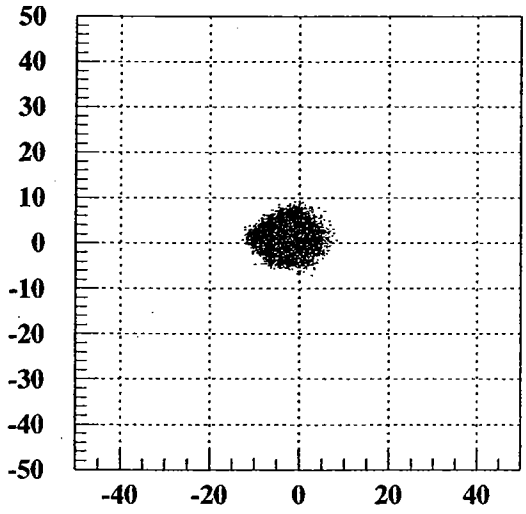
adjust D1, D2 both.

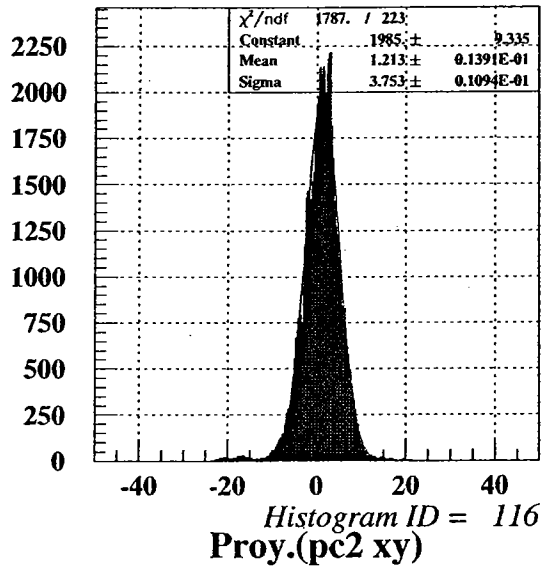
D1 = 582.572 (mT)

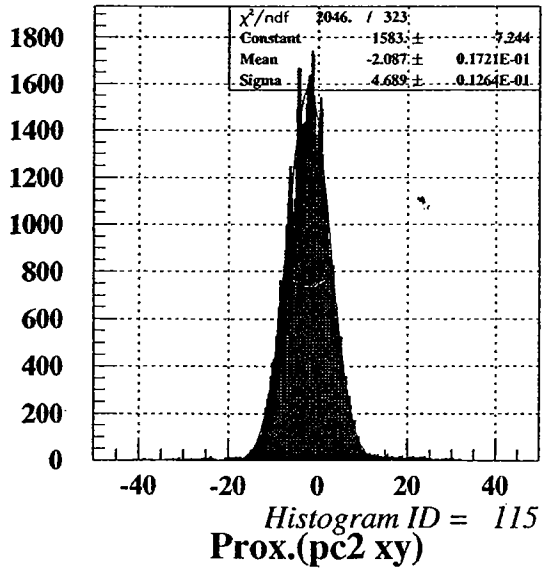
D2 = 582.612 (mT)

187

F2 Image after beame comes back







6/8

01:00

High rate run

Bp = 2.177

Att = 1/12 Dbl = 160 mA → 1 kΩ F2

⇩

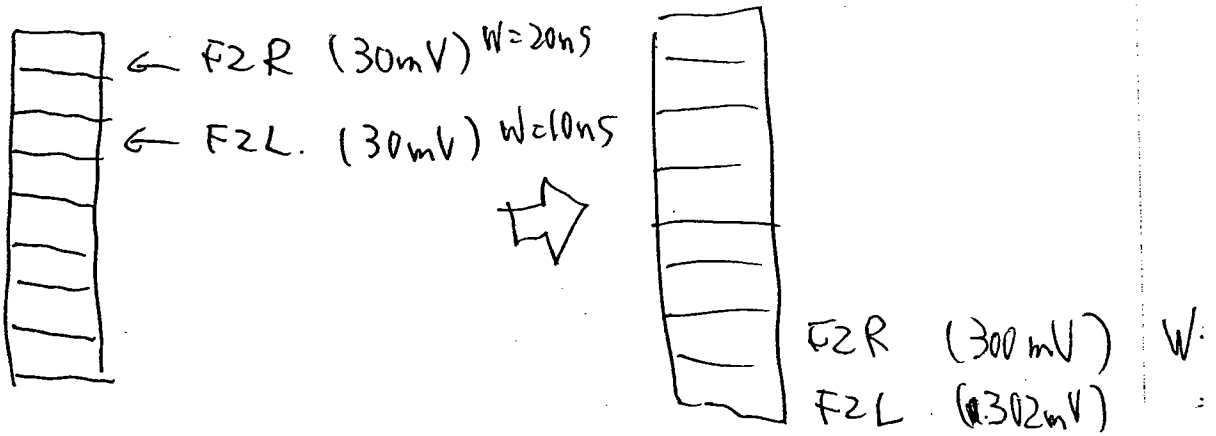
Att = 1 (full) Dbl = 2.3 μA → 15 kΩ F2

[redacted] increase

F2 pl. thre [redacted]

· Discri @ E6

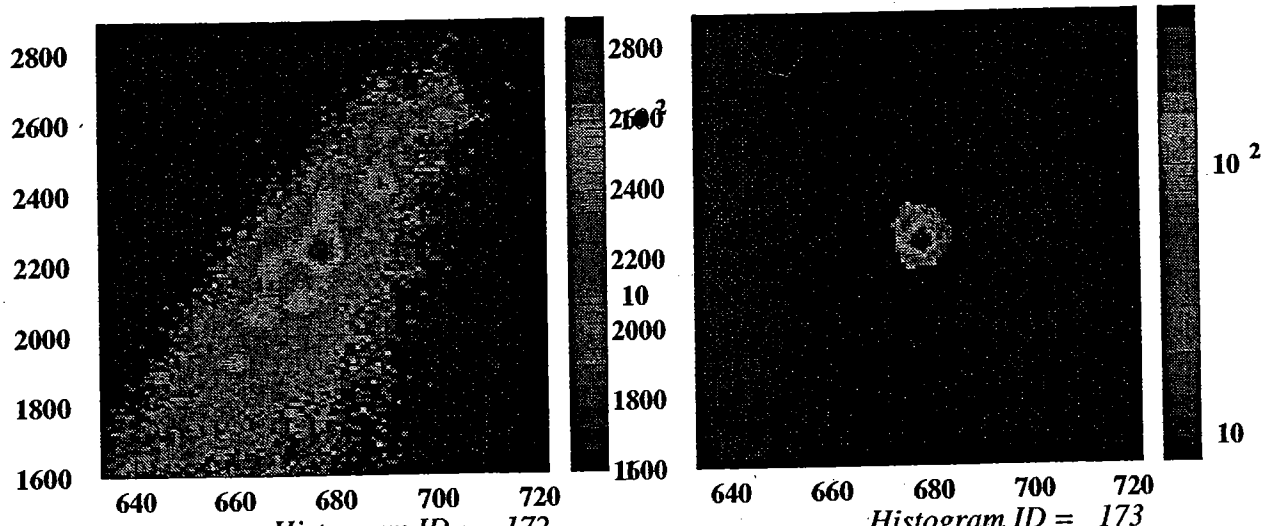
623B (LeCroy)



F2 156 → 1K.

low beam intensity ~ 1K @ P2

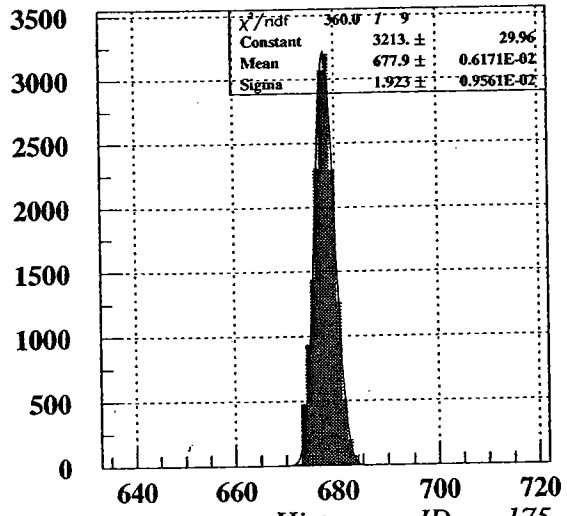
↓



Histogram ID = 172

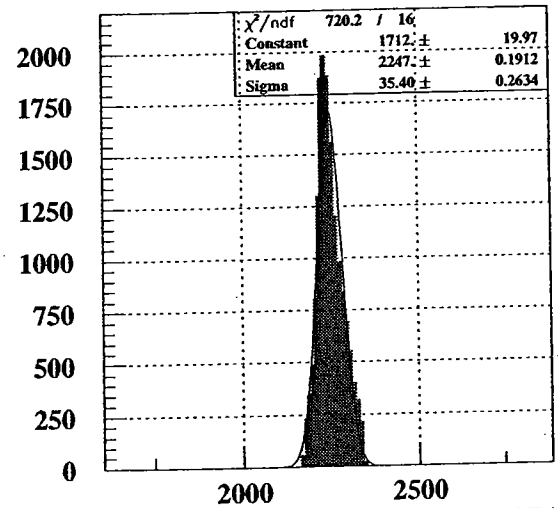
XYBlow.(dE_low(ch) vs F3RighCutProj.(XYBlow.(dE_low(ch) vs F3Right ηχ))

Histogram ID = 173



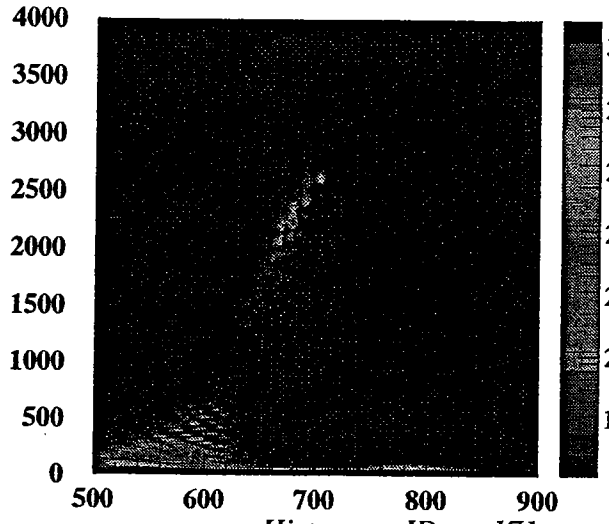
Histogram ID = 175

x.(CutProj.(XYBlow.(dE_low(ch) vs F3Right ηχ)) CutProj.(XYBlow.(dE_low(ch) vs F3Right η



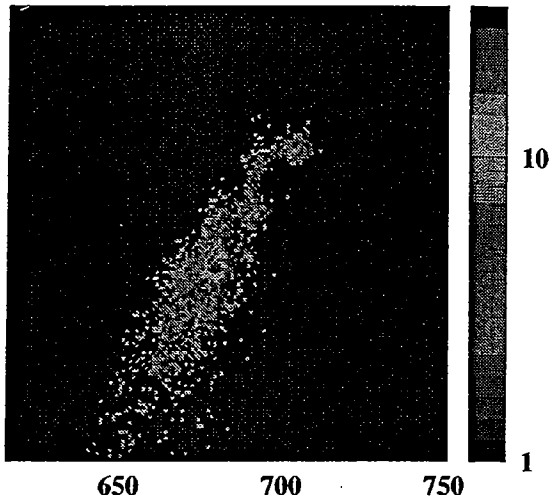
Histogram ID = 174

Full Beam. w/ low thre (30mV) ~ 15Kcps



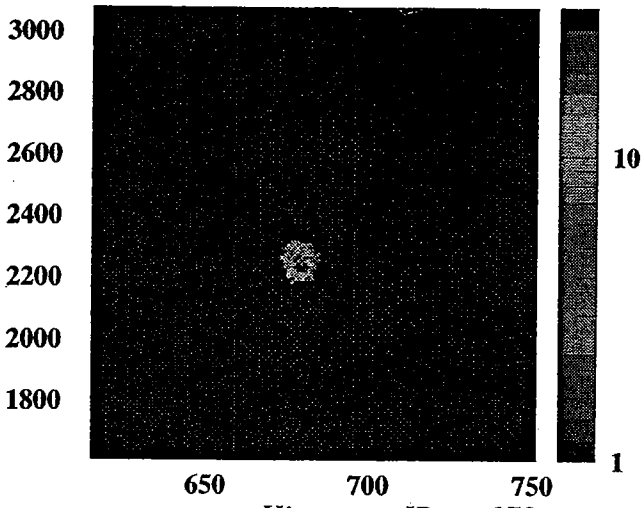
Histogram ID = 171

dE_low(ch) vs F3Right ηχ



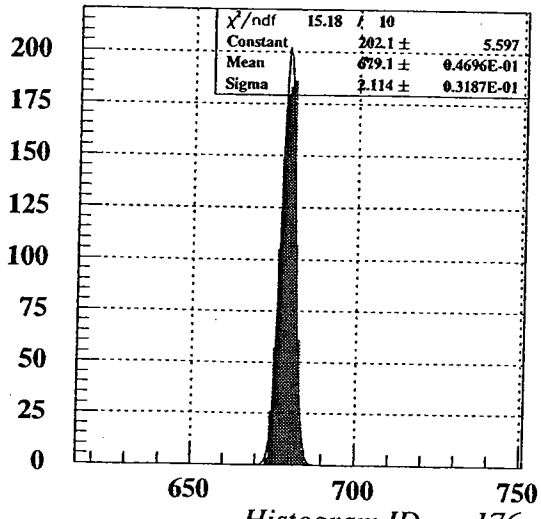
Histogram ID = 172

XYBlow.(dE_low(ch) vs F3Right ηχ)

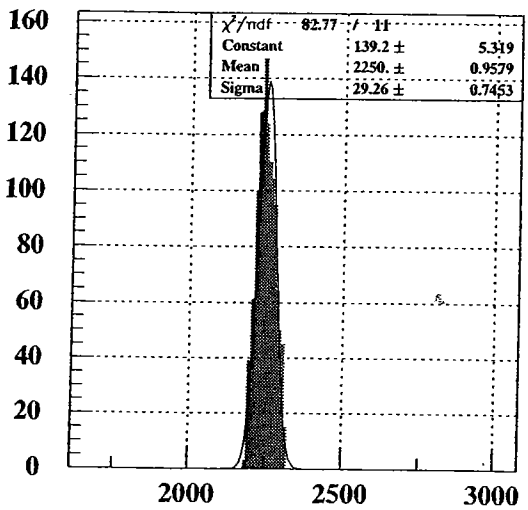


Histogram ID = 173

CutProj.(XYBlow.(dE_low(ch) vs F3Right ηχ))



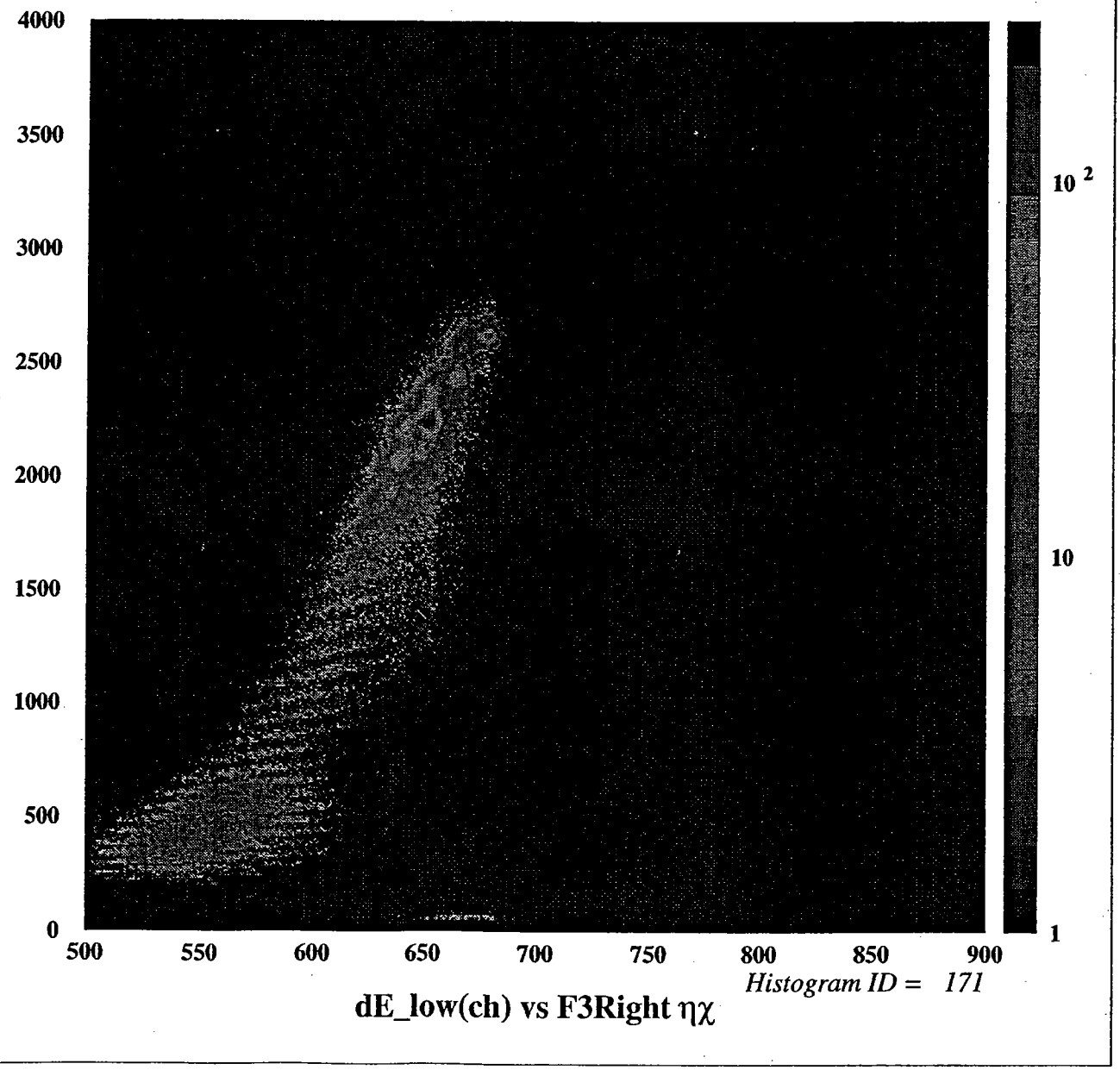
Histogram ID = 176



Histogram ID = 175

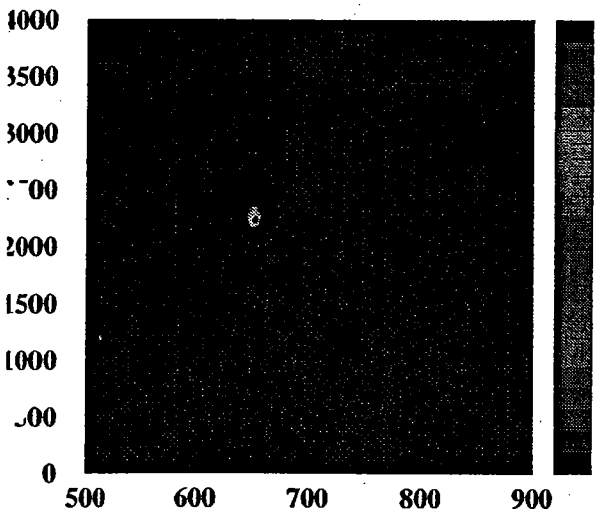
x.(CutProj.(XYBlow.(dE_low(ch) vs F3Right ηχ)))

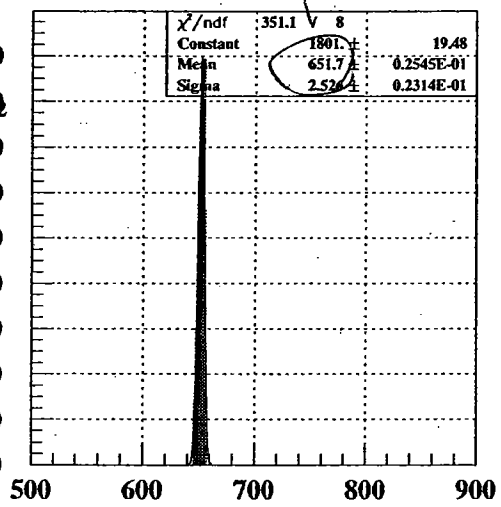
Full beam w/ high thre (300mV)
~1kcps



Sep. 193

TOF is shifted
from 679 ch → 652 ch
σT = ~27 ch ~ 1.3 ns



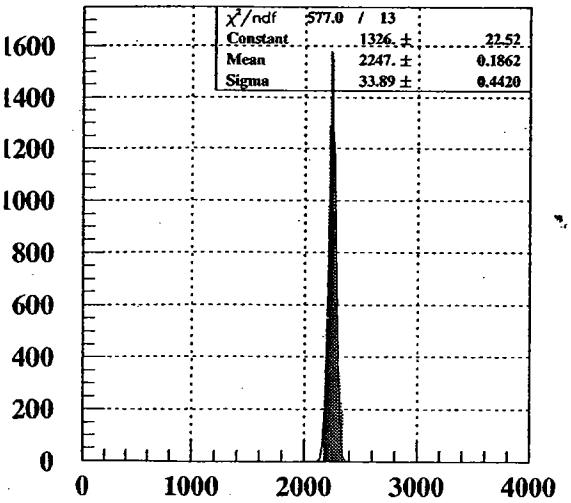


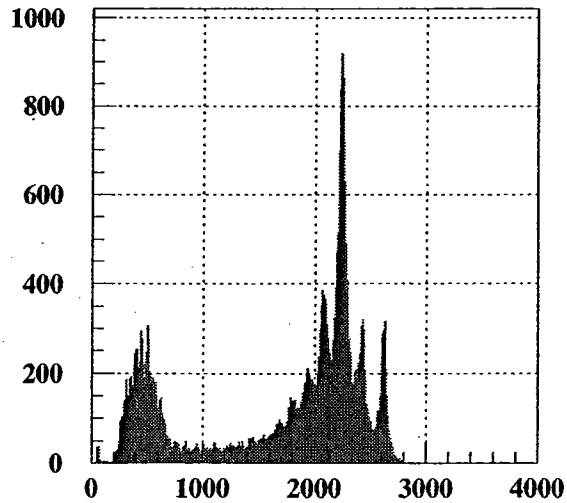
Histogram ID = 178

CutProj.(dE_low(ch) vs F3Right ηχ)Proj

Histogram ID = 180

ox.(CutProj.(dE_low(ch) vs F3Right ηχ))





Histogram ID = 179

oy.(CutProj.(dE_low(ch) vs F3Right ηχ))

Histogram ID = 177

Proy.(dE_low(ch) vs F3Right ηχ)

5:30 Run 218 BLho = 2.87

Kun 10

	1790	947	7607	7296	12597	12233	849486
120	2132	1330	6564	5162	14335	16772	1206458
~~124~~ 122	18164	10090	21131	19791	17661	16152	1092998
121	1543	926	4360	4082	8802	11476	920246
123	3832	2380	4935	3692	9104	3982	248148
124	12126	7939	14737	11904	12996	12699	780312
125	1830	969	3972	4030	9088	12305	1067405

#

by Pitopito & Sugo

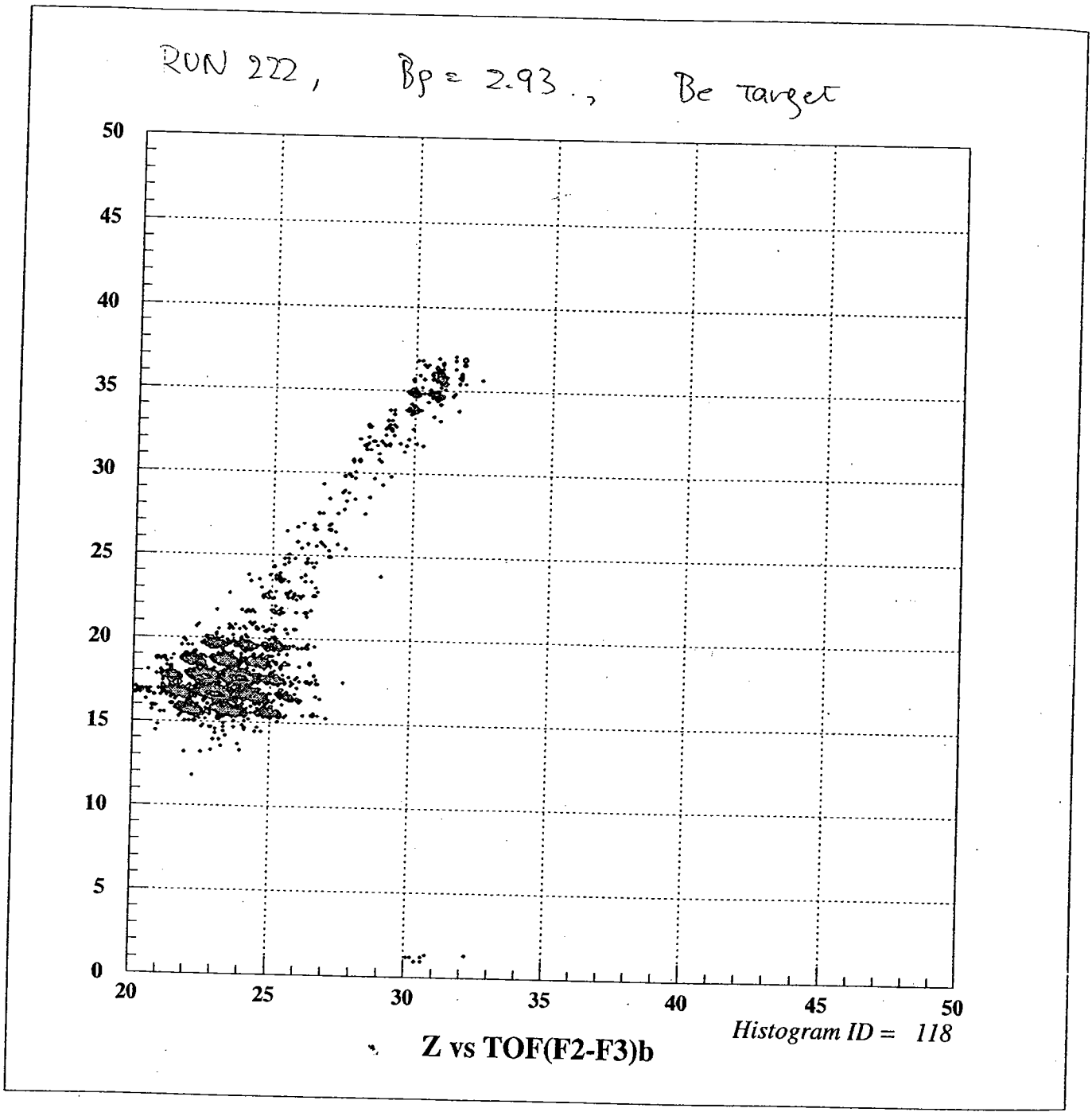
	^{60}Ni	^{61}Ni	^{62}Ni	^{65}Zn	^{66}Zn	event
P.2 ~~126~~						
127	17289	19241	~~18284~~	17705	15403	1103856
126	4310	6420	4917	14031	14877	619272
128	10120	12396	10043	11953	10758	677466
129~131	4299	7831	6861	14634	18279	817766
133	11301	15699	12083	13416	14218	800198
132	4911	9188	10147	16794	23151	1166686
134	見つけ	17928	15885	14710	17694	970144
135~136		8378	~~13581~~ 10148	12491	22888	1153286
138		13999	14814	12082	15975	848022
137		5543	7815	7791	15988	931104
139		16836	18888	12304	19793	1062326

	^{61}Ni	^{62}Ni	^{65}Zn	^{66}Zn	event
Run 142	3210	12606	8622	20190	936960
141	6392	6700	18062	14131	1016870
143	9653	15036	5462	14182	934520
144	2246	2026	1691	5794	839970

~~event~~ ~~^{67}Zn~~ ~~^{66}Zn~~

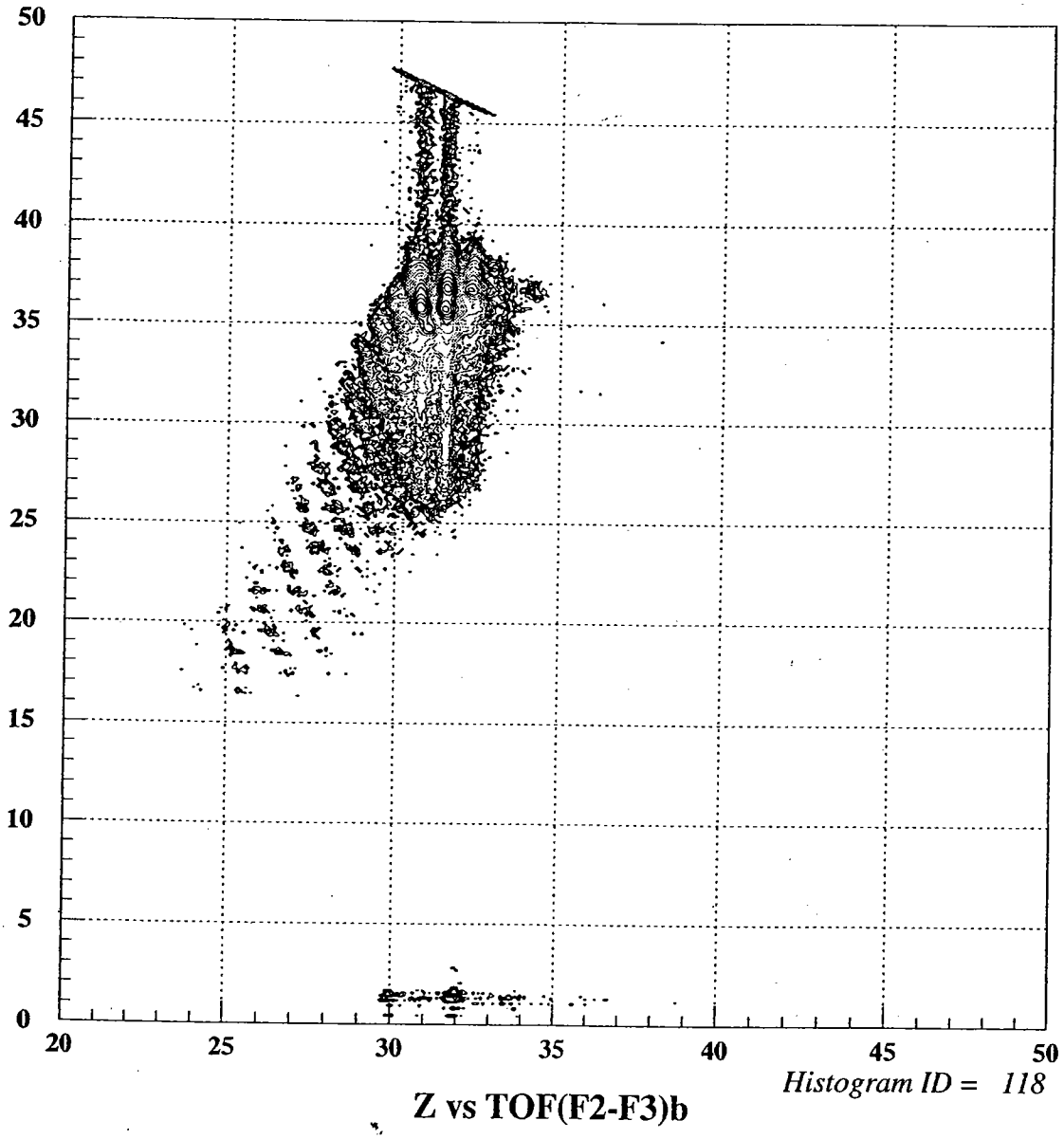
	^{62}Ni	^{63}Ni	^{64}Zn	^{67}Zn	event
Run 123	2982	7065	6385	10381	581696
124	4665	6705	4984	11130	1196210
126	8327	10008	5464	11852	729804
125	3250	5230	3385	8276	1261602
127	6630	9891	3976	10663	801296
128	)	20 rdf in Hps dag 3			
129					
180-181	6037	10202	2620	9893	1013210
184	1764	4260	358	3010	554612
185	730	1204	267	1640	123518
186	385	982	63	385	1199504

L99


RUN 222, Bp = 2.93., Be target
50
45
40
35
30
25
20
15
10
5
0
20
25
30
35
40
45
50
Z vs TOF(F2-F3)b
Histogram ID = 118

RUN 2214.6 Bρ = ~~2.54~~ 2.52 , Be target

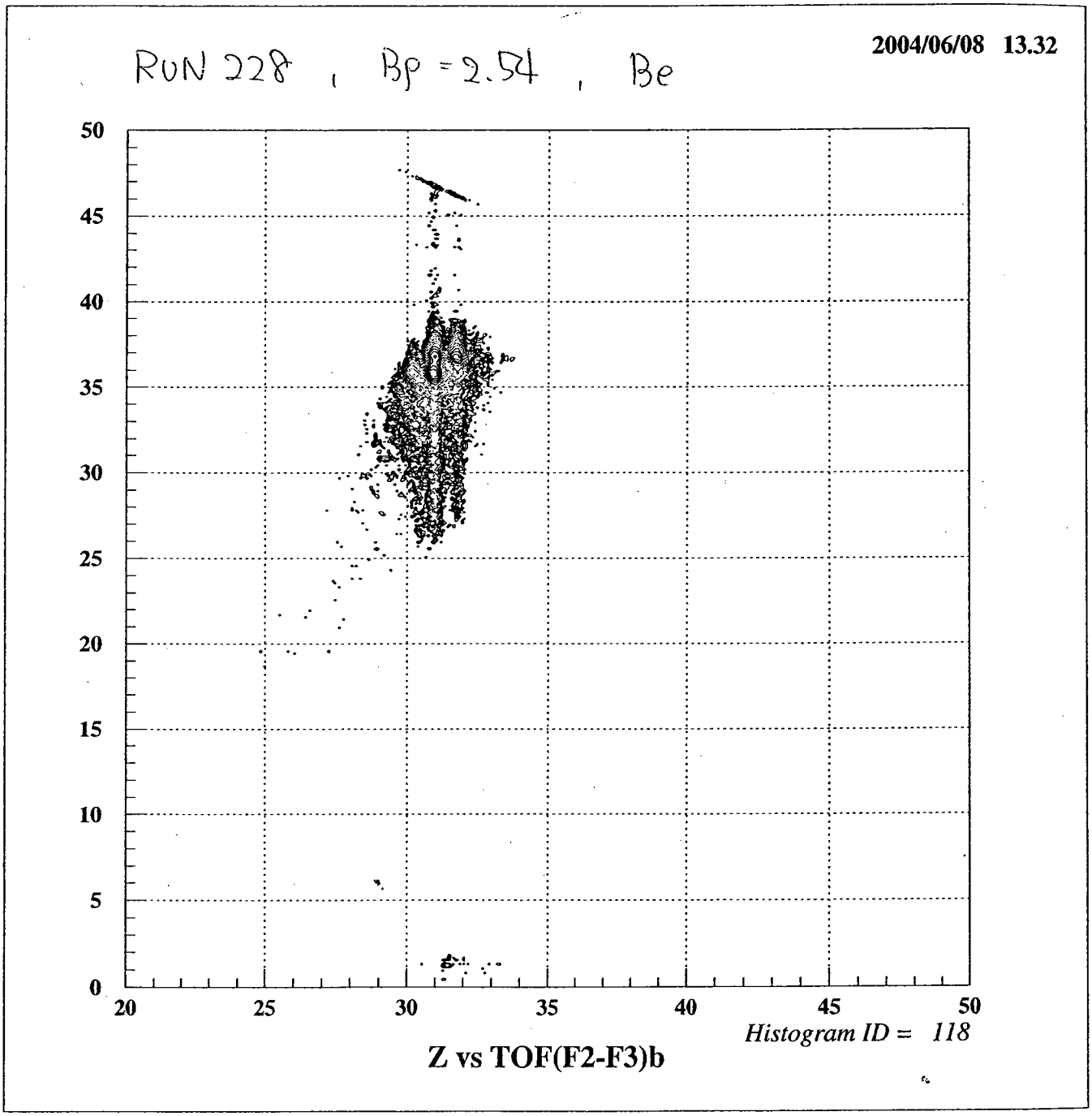
2004/06/08 13.09



RUN 226

att. $\frac{1}{100}$ @ Linac

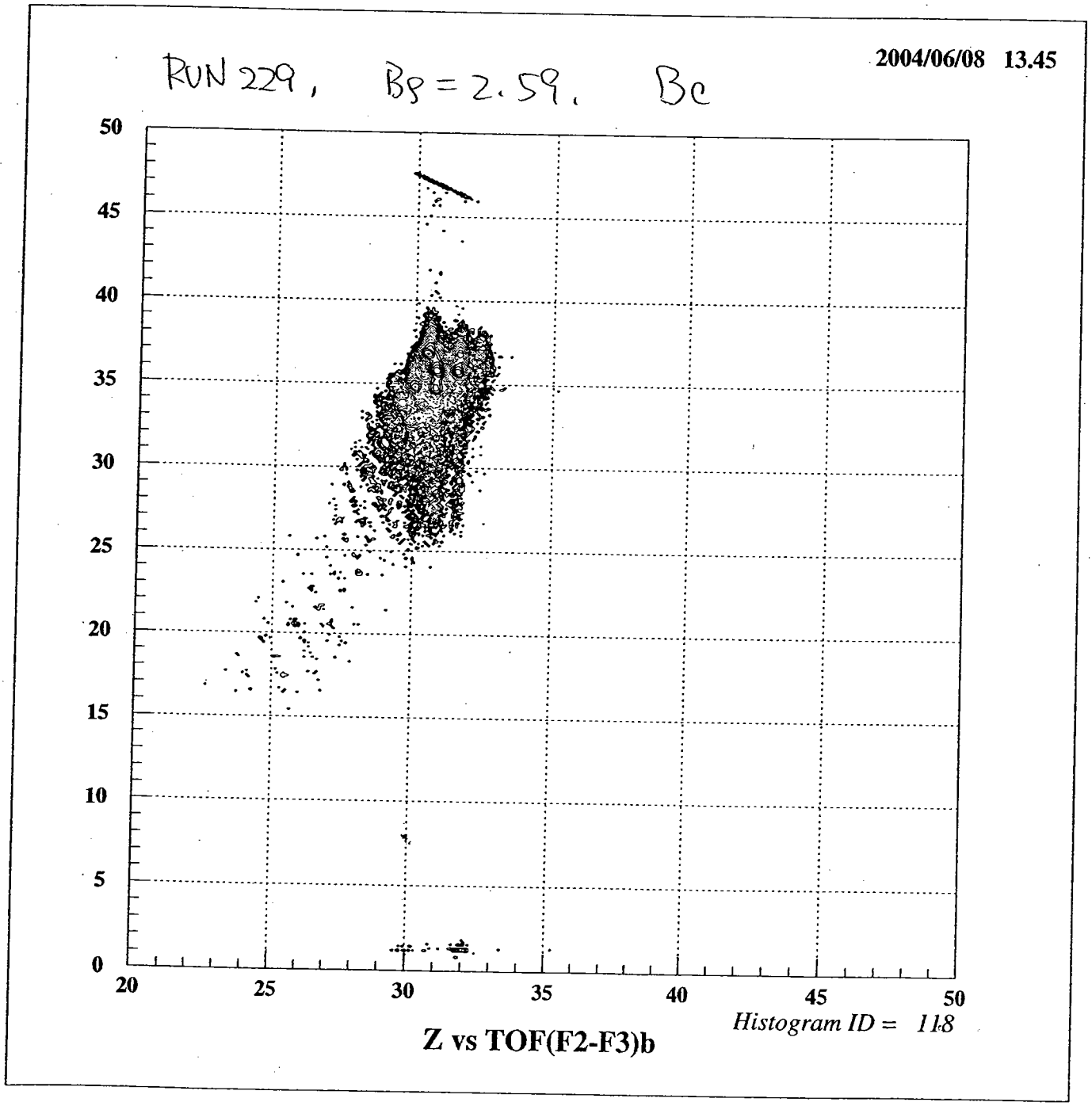
$\frac{1}{10}$ @ RRC.



RUN. 229

att $\frac{1}{100}$ @ Linear

$\frac{1}{3}$ @ RRC.



RUN 230

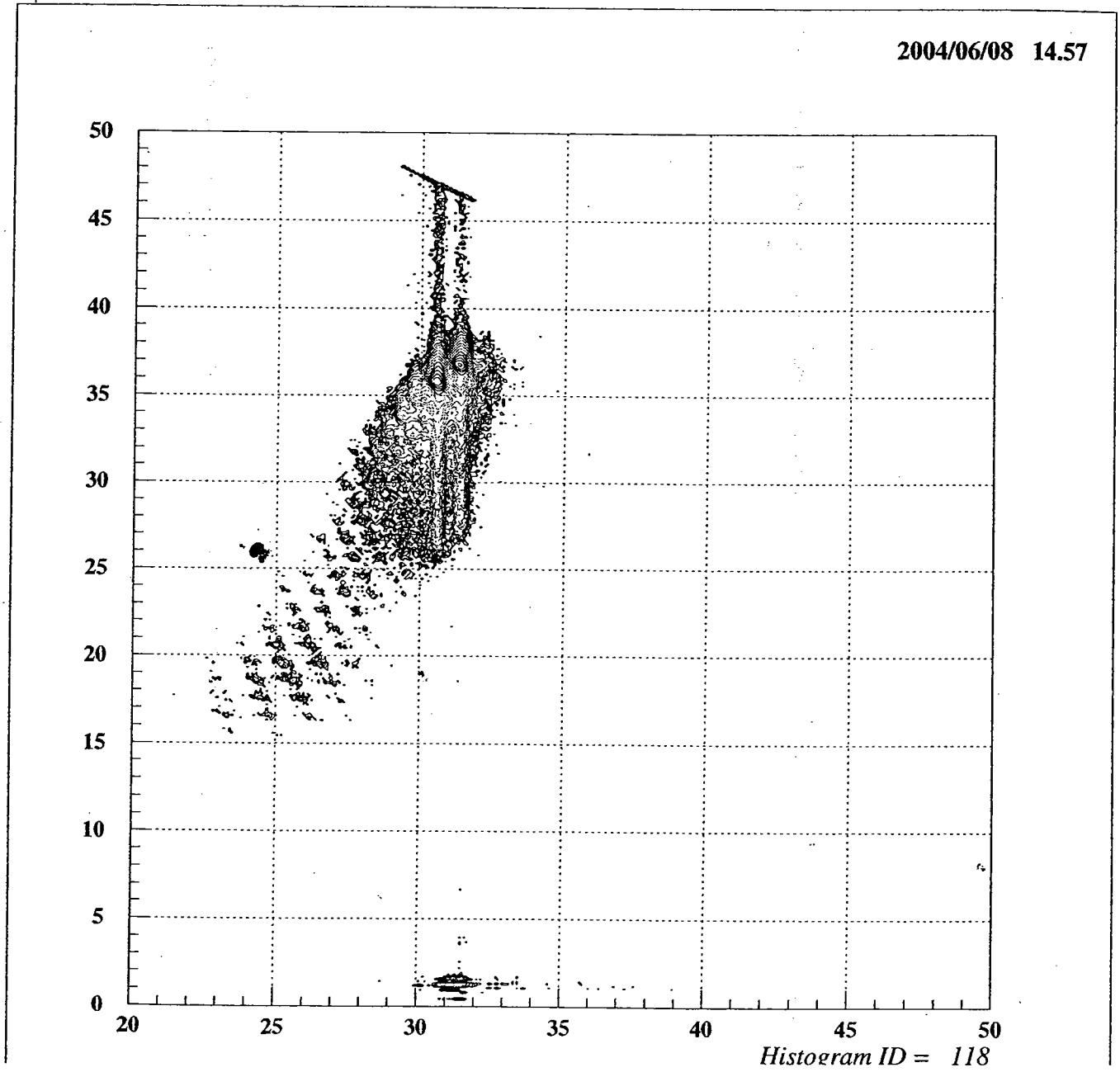
att. $\frac{1}{100}$ @ Linear

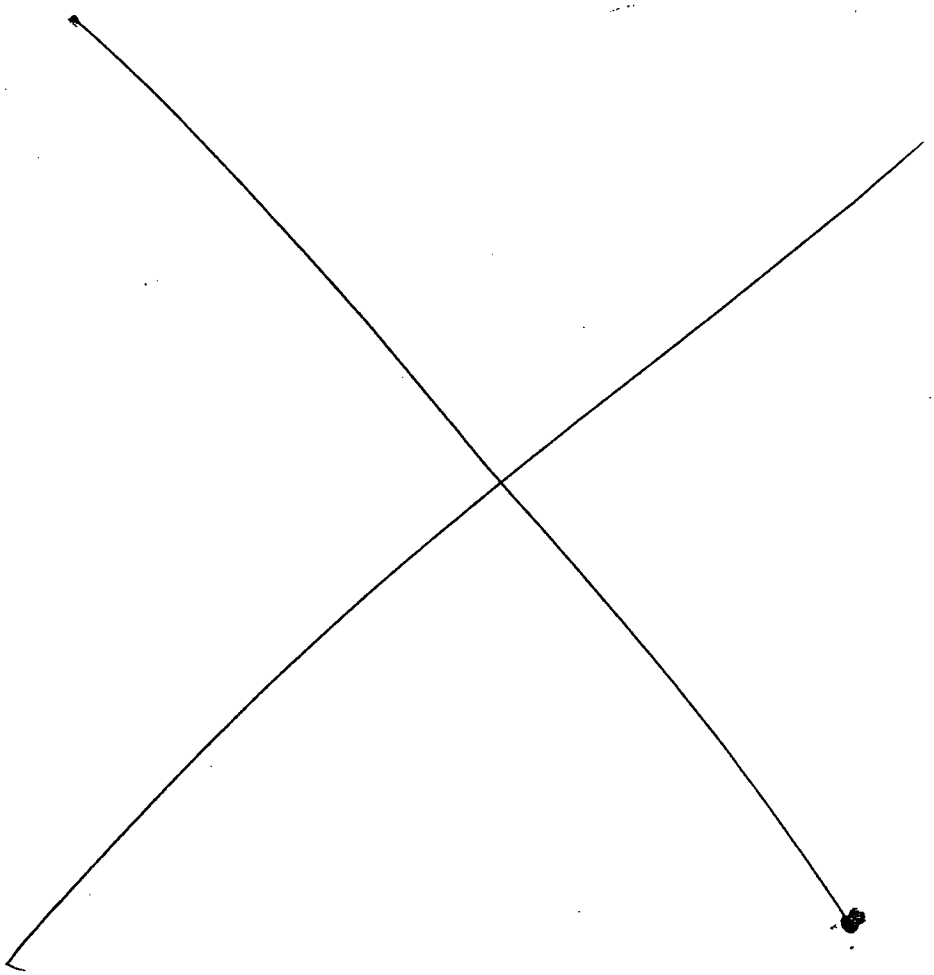
$\frac{1}{3}$ @ RRC.

LINAC RF Down

RUN 231

att $\frac{1}{600}$ 800 cps @ F2





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