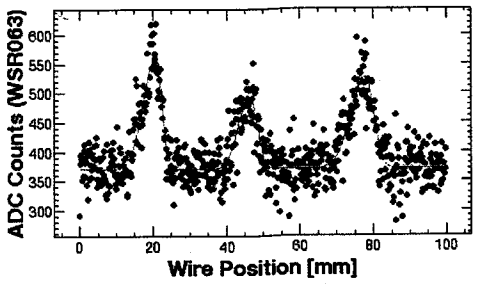
File Edit Control Window 06/09/2008 21:02:12 Help

Wire A

ChiSquare = 576052. Goodness = .49239

sigma1 = 2.47507 +/- .11595	sigma2 = 2.53133 +/- .17507	sigma3 = 3.08003 +/- .15672
asymm1 = -.35511 +/- .08521	asymm2 = -.18622 +/- .13779	asymm3 = -.25195 +/- .09676
xwire1 = 20.6921 +/- .25614	xwire2 = 46.1533 +/- .42686	xwire3 = 77.7450 +/- .36458
b1 = 191.208 +/- 7.34731	b2 = 123.351 +/- 7.19586	b3 = 156.386 +/- 6.61737
a1 = 371.235 +/- 3.06352	a2 = -.00145 +/- .05094	

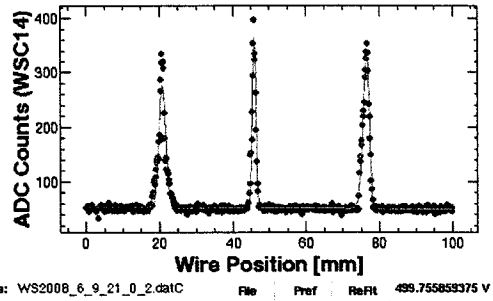


File: WS2008_6_9_20_57_12.datA File Pref ReFit 659.677734375 V 1529

Wire C

ChiSquare = 53738.1 Goodness = .49239

sigma1 = .94564 +/- .01747	sigma2 = .51701 +/- .00916	sigma3 = .86193 +/- .01311
asymm1 = -.04474 +/- .03803	asymm2 = -.12261 +/- .03667	asymm3 = -.29032 +/- .03010
xwire1 = 20.6878 +/- .04404	xwire2 = 45.8346 +/- .02322	xwire3 = 76.8510 +/- .03177
b1 = 226.044 +/- 3.57154	b2 = 314.556 +/- 4.80825	b3 = 286.431 +/- 3.73706
a1 = 52.5207 +/- .79477	a2 = -.03727 +/- .01363	

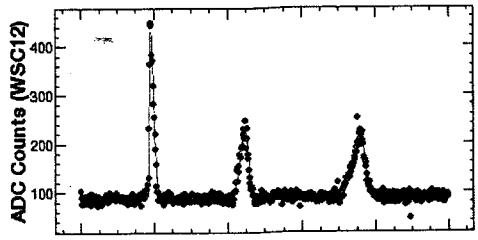


File: WS2008_6_9_21_0_2.datC File Pref ReFit 499.755859375 V 7838

Wire B

ChiSquare = 39649.8 Goodness = .49239

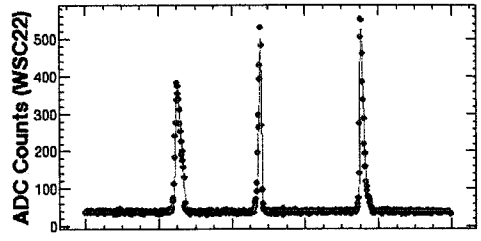
sigma1 = .56382 +/- .00750	sigma2 = 1.09025 +/- .02572	sigma3 = 1.66335 +/- .03764
asymm1 = -.45350 +/- .02366	asymm2 = -.26378 +/- .04724	asymm3 = -.31194 +/- .04332
xwire1 = 19.8918 +/- .01638	xwire2 = 44.7414 +/- .06307	xwire3 = 76.0325 +/- .08929
b1 = 346.164 +/- 3.96304	b2 = 140.614 +/- 2.85010	b3 = 121.522 +/- 2.31044
a1 = 88.4647 +/- .67559	a2 = .00663 +/- .01179	



Wire D

ChiSquare = 26214.0 Goodness = .49239

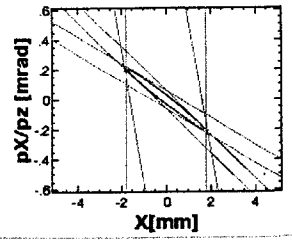
sigma1 = .78113 +/- .00760	sigma2 = .38606 +/- .00374	sigma3 = .49320 +/- .00399
asymm1 = .35600 +/- .01889	asymm2 = -.53498 +/- .01738	asymm3 = .57397 +/- .01343
xwire1 = 24.9994 +/- .01808	xwire2 = 47.9499 +/- .00835	xwire3 = 75.1179 +/- .00812
b1 = 327.811 +/- 2.73859	b2 = 462.907 +/- 3.87362	b3 = 493.846 +/- 3.44567
a1 = 38.6383 +/- .54326	a2 = .00908 +/- .00932	



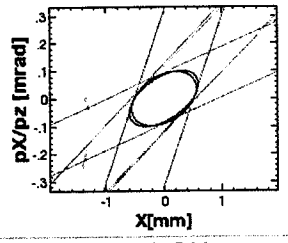
File Edit Window 06/09/2008 21:02:19 Help

Wire Scan | Optics Calculate | Matching

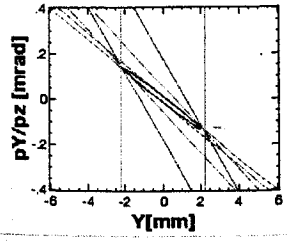
X phase space at Wire A



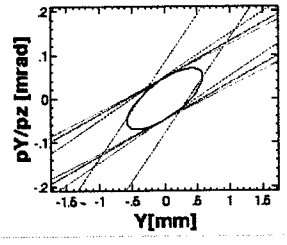
X phase space at Matching Point



Y phase space at Wire A



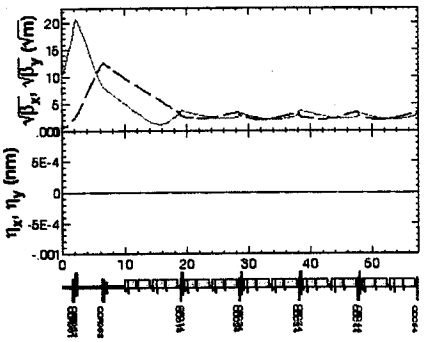
Y phase space at Matching Point



Results of Measurement

β_x @QDC24 [m] :	6.159	β_y @QDC24 [m] :	12.091
α_x @QDC24 :	-.406	α_y @QDC24 :	-1.062
ε_x [m] :	5.0619E-8	ε_y [m] :	2.7683E-8
$\gamma\varepsilon_x$ [π.mm.mrad] :	201.774	$\gamma\varepsilon_y$ [π.mm.mrad] :	110.349
Bmag x :	1.019	Bmag y :	1.000
εBmag x :	5.1560E-8	εBmag y :	2.7683E-8
γεBmag x :	205.603	γεBmag y :	110.349

Optics Plot



Wire Selection

3-wire:ABC 3-wire:ABD 3-wire:ACD 3-wire:BCD

◆ 4-wire:ABCD

■ NonLinearFit Err(meas), nσ n: 0 Err(opt) (%): 0

"Calculate Optics" Save All Parameters

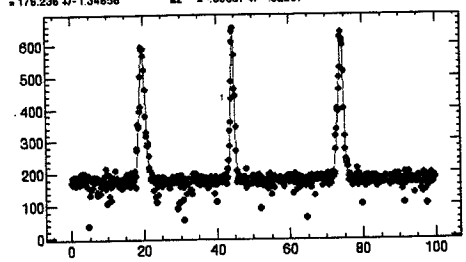
5e77- Matching pf-a1

06/09/2008 21:32:17 Help

Edit Control Window

iSquare = 147380. Goodness = .49230

ma1 = .81705 +/- .01533 sigma2 = .52544 +/- .01073 sigma3 = .75044 +/- .01310
/mm1 = .01229 +/- .03873 asymm2 = -.10696 +/- .04243 asymm3 = -.31602 +/- .03434
ire1 = 19.5112 +/- .03675 xwire2 = 44.4247 +/- .02731 xwire3 = 74.3169 +/- .03156
= 400.507 +/- 8.43408 b2 = 453.363 +/- 7.96986 b3 = 446.837 +/- 6.70260
= 178.236 +/- 1.34656 a2 = -.00397 +/- .02297

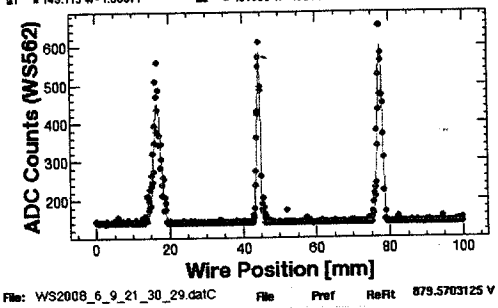


s: /PF/data/Raw/WS2008_6_9_21_ File Pref ReFit 479.765625 V 1989

Wire C

ChiSquare = 142284. Goodness = .49239

sigma1 = .97402 +/- .02109 sigma2 = .47525 +/- .01008 sigma3 = .67513 +/- .01166
asymm1 = .05692 +/- .04439 asymm2 = -.29849 +/- .04260 asymm3 = -.03004 +/- .03563
xwire1 = 16.5306 +/- .05295 xwire2 = 44.4730 +/- .02481 xwire3 = 77.4060 +/- .02963
b1 = 310.366 +/- 5.73399 b2 = 445.388 +/- 8.15845 b3 = 462.372 +/- 6.86207
a1 = 143.115 +/- 1.30677 a2 = -.01885 +/- .02233

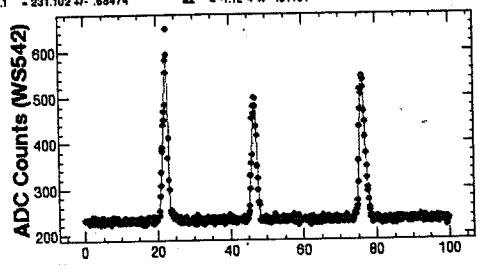


File: WS2008_6_9_21_30_29.datC File Pref ReFit 879.5703125 V 1743

Wire D

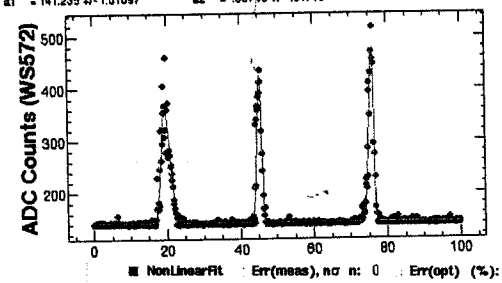
ChiSquare = 41409.8 Goodness = .49239

igma1 = .83319 +/- .00809 sigma2 = .84986 +/- .01055 sigma3 = .78627 +/- .00992
symm1 = -.39070 +/- .02454 asymm2 = -.03977 +/- .03385 asymm3 = .22898 +/- .02607
wire1 = 22.5442 +/- .01904 xwire2 = 46.6045 +/- .02694 xwire3 = 75.9771 +/- .02448
1 = 346.188 +/- 3.82025 b2 = 288.912 +/- 3.75674 b3 = 313.128 +/- 3.47881
1 = 231.102 +/- .68474 a2 = -1.1E-4 +/- .01181



ChiSquare = 83704.7 Goodness = .49239

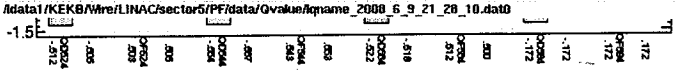
sigma1 = 1.20564 +/- .02539 sigma2 = .84893 +/- .01418 sigma3 = .67920 +/- .01232
asymm1 = .21904 +/- .04209 asymm2 = -.20849 +/- .04451 asymm3 = -.39023 +/- .03455
xwire1 = 19.2620 +/- .06214 xwire2 = 45.3109 +/- .03537 xwire3 = 76.0516 +/- .02872
b1 = 220.546 +/- 3.95803 b2 = 284.806 +/- 5.38001 b3 = 336.420 +/- 5.24909
a1 = 141.235 +/- 1.01097 a2 = .00745 +/- .01710



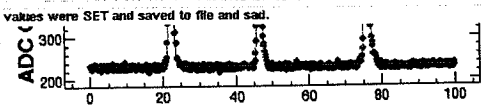
NonLinearFit Err(meas), no n: 0 Err(opt) (%): 0

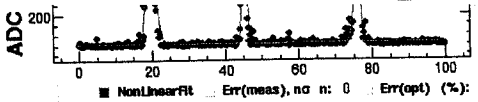
"Calculate Optics" Save All Parameters

Qmag values were SAVEd to /data1/KEKB/Wire/LINAC/sector5/PF/data/Qvalue/lqname_2008_6_9_21_28_10.dat0



Q-Mag values were SET and saved to file and sad.

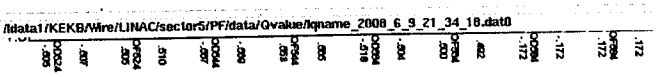




NonLinearFit Err(meas), no n: 0 Err(opt) (%): 0

"Calculate Optics" Save All Parameters

Qmag values were SAVEd to /data1/KEKB/Wire/LINAC/sector5/PF/data/Qvalue/lqname_2008_6_9_21_34_18.dat0



Q-Mag values were SET and saved to file and sad.

"Calculate Optics" Save All Parameters

Qmag values were SAVEd to /data1/KEKB/Wire/LINAC/sector5/PF/data/Qvalue/lqname_2008_6_9_21_40_49.dat0

File Edit Control Window

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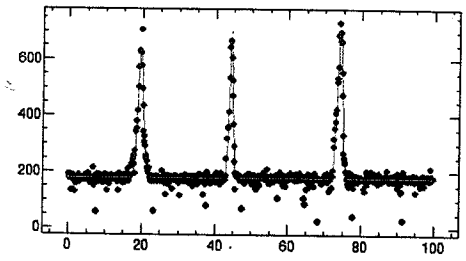
Wire A

ChiSquare = 181138. Goodness = .49233

sigma1 = .74465 +/- .01415 | sigma2 = .54034 +/- .01123 | sigma3 = .72058 +/- .01203
asymm1 = -.05017 +/- .03923 | asymm2 = -.11503 +/- .04316 | asymm3 = -.28957 +/- .03314
xwire1 = 19.4788 +/- .03578 | xwire2 = 44.2862 +/- .02657 | xwire3 = 74.3099 +/- .02925
b1 = 457.091 +/- 7.44153 | b2 = 485.740 +/- 8.70536 | b3 = 526.466 +/- 7.55899
a1 = 176.752 +/- 1.46695 | a2 = .00627 +/- .02513

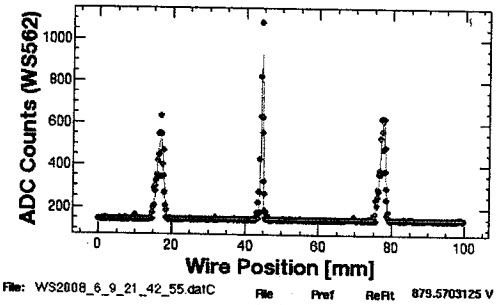


File: /PF/data/Raw/WS2008_6_9_21_ File Pref ReFit 479.765625 V 1991

Wire C

ChiSquare = 190138. Goodness = .49239

sigma1 = .85942 +/- .01832 | sigma2 = .29781 +/- .00516 | sigma3 = .71935 +/- .01372
asymm1 = -.15267 +/- .04337 | asymm2 = .04117 +/- .03602 | asymm3 = -.27412 +/- .03795
xwire1 = 18.8966 +/- .04565 | xwire2 = 44.4268 +/- .01313 | xwire3 = 77.6353 +/- .03343
b1 = 388.929 +/- 7.04791 | b2 = 795.331 +/- 11.9121 | b3 = 469.521 +/- 7.68947
a1 = 142.063 +/- 1.49756 | a2 = -.00310 +/- .02571

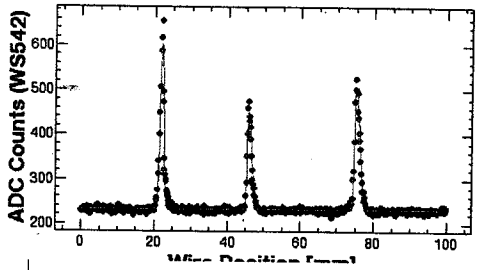


File: WS2008_6_9_21_42_55.datC File Pref ReFit 879.5703125 V 1745

Wire B

ChiSquare = 35119.1 Goodness = .49239

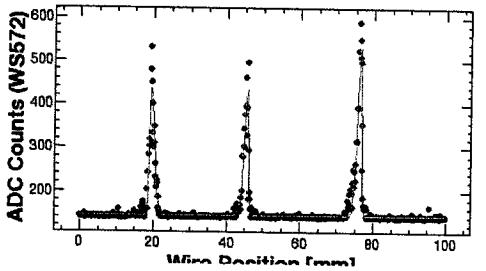
sigma1 = .49953 +/- .00614 | sigma2 = .58913 +/- .01092 | sigma3 = .70079 +/- .00987
asymm1 = -.05562 +/- .02552 | asymm2 = .42101 +/- .03508 | asymm3 = .44315 +/- .02620
xwire1 = 21.9470 +/- .01561 | xwire2 = 45.8697 +/- .02532 | xwire3 = 75.1079 +/- .02250
b1 = 374.384 +/- 3.95979 | b2 = 227.808 +/- 3.64145 | b3 = 276.576 +/- 3.34516
a1 = 232.029 +/- .62570 | a2 = -.01767 +/- .01081



Wire D

ChiSquare = 125112. Goodness = .49239

sigma1 = .67736 +/- .01725 | sigma2 = .58172 +/- .01591 | sigma3 = .61456 +/- .01237
asymm1 = .31152 +/- .05000 | asymm2 = -.72302 +/- .04827 | asymm3 = -.56782 +/- .03379
xwire1 = 19.3259 +/- .04146 | xwire2 = 45.7437 +/- .03533 | xwire3 = 76.5262 +/- .02534
b1 = 294.177 +/- 6.43029 | b2 = 291.964 +/- 8.90064 | b3 = 369.589 +/- 6.75127
a1 = 142.614 +/- 1.19672 | a2 = .00844 +/- .02052

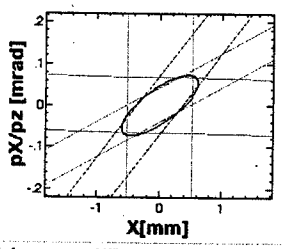


File Edit Window

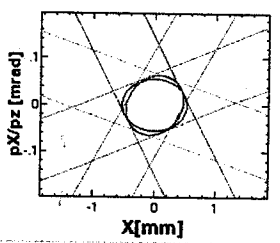
06/09/2008 21:45:23 Help

Wire Scan | Optics Calculate | Matching

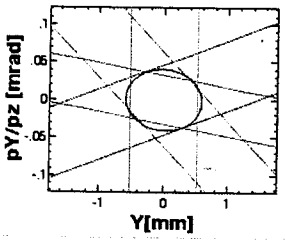
X phase space at Wire A



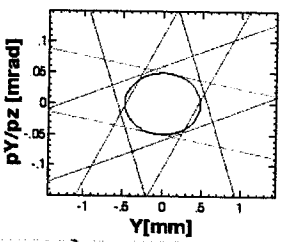
X phase space at Matching Point



Y phase space at Wire A



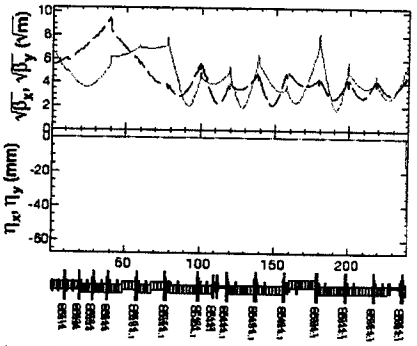
Y phase space at Matching Point



Results of Measurement

β_x @AC574+1 [m] :	7.358	β_y @AC574+1 [m] :	9.635
α_x @AC574+1 :	-.168	α_y @AC574+1 :	.003
ε_x [m] :	2.9218E-8	ε_y [m] :	2.3865E-8
$\gamma\varepsilon_x$ [π.mm.mrad] :	142.946	$\gamma\varepsilon_y$ [π.mm.mrad] :	116.757
Bmag x :	1.051	Bmag y :	1.000
εBmag x :	3.0700E-8	εBmag y :	2.3865E-8
γεBmag x :	150.194	γεBmag y :	116.757

Optics Plot



Wire Selection

3-wire:ABC | 3-wire:ABD | 3-wire:ACD | 3-wire:BCD
◆ 4-wire:ABCD
■ NonLinearFit Err(meas), nσ n: 0 Err(opt) (%): 0

"Calculate Optics" Save All Parameters

Qmag values were SAVEd to /data1/KEKB/Wire/LINAC/sector5/PF/data/Qvalue/qname_2008_6_9_21_40_49.dat0

197

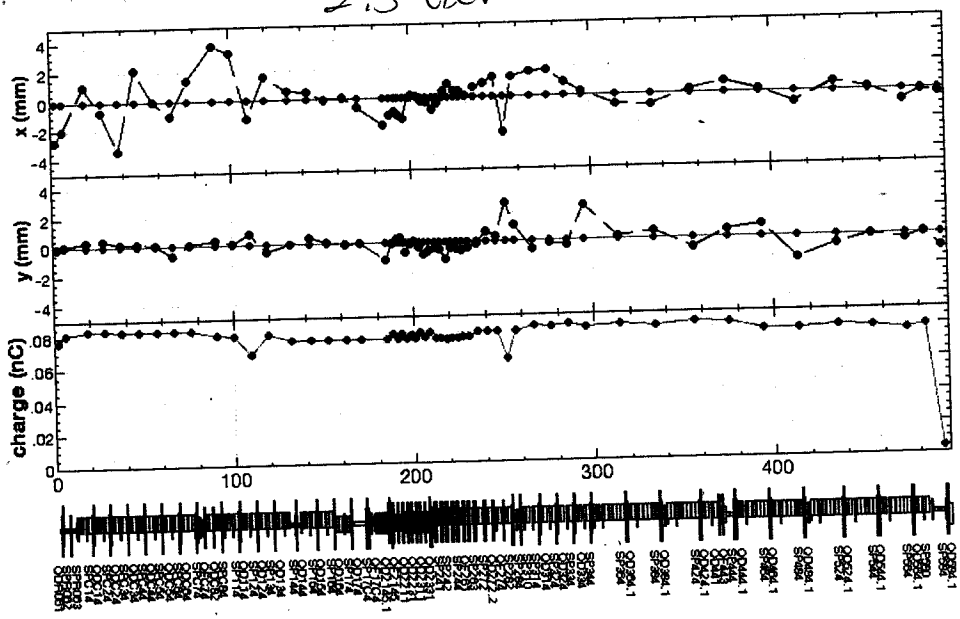
8 GeV に set してみる

06/09/2008 22:58:41

Edit Window

AF^-1 | ΔK1 | ΔB'

2.5 GeV

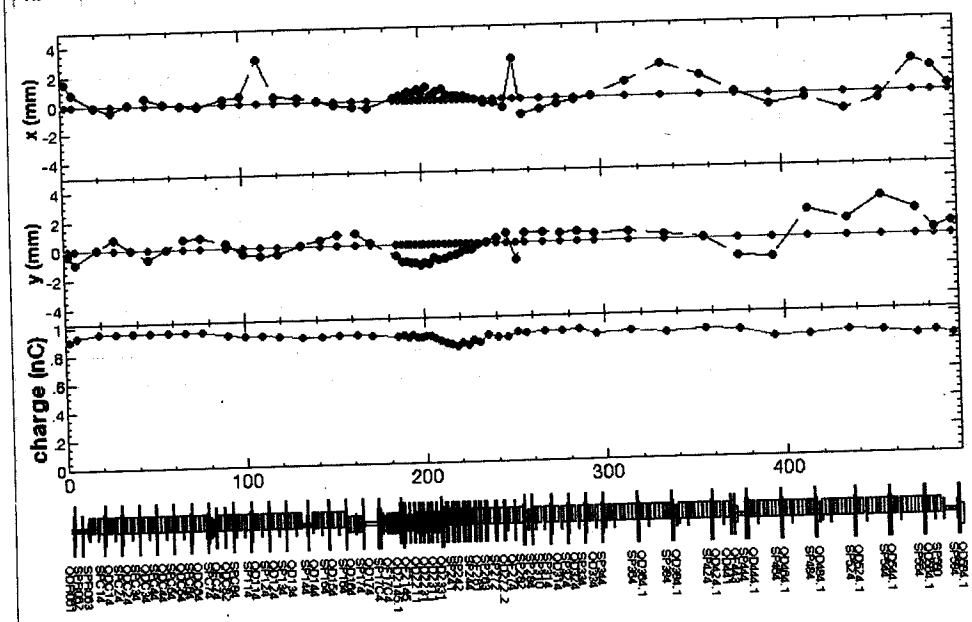


← reference 軌道に入れる

06/09/2008 23:12:36

Edit Window

AF^-1 | ΔK1 | ΔB'



8 GeV 軌道
− 2.5 GeV "

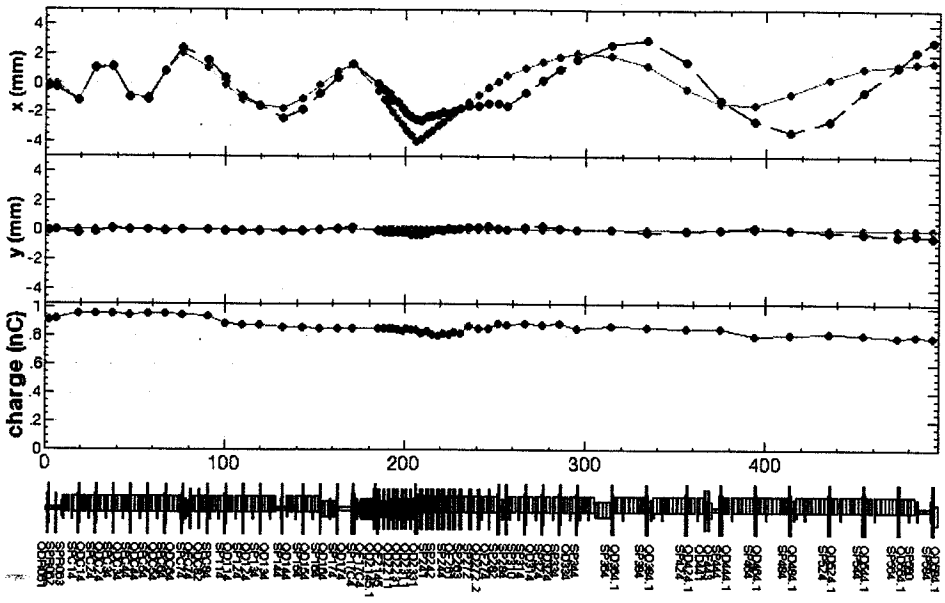
8 GeV で 測定

SXC11	−2 A	+2 A
SYC11	−2 A → −1 A,	+ 1 A → +0.5 A
SYC11	−4,	−3. −3.6. −1.0

SXC77
-2A

File Edit Window 06/09/2008 23:17:47 Help

Orbit AF^-1 ΔK1 ΔB'



Read Optics
s1(m) 0
s2(m) 500
Set ref
Clear ref
Plot orbit
File sxc11_1.dat

Steering SX_C1_1
Read
I(A) 0
ΔI(A) 0
Set
Set ref

Steering(X) SXC11
K0 1.4E-4
Set Clear
Steering(Y) SYC11
K0 7E-5
Set Clear

Select Q
QDC14
QFC14
QDC24
QFC24
QDC34
QFC34
QDC44
QFC44
QDC54
QFC54

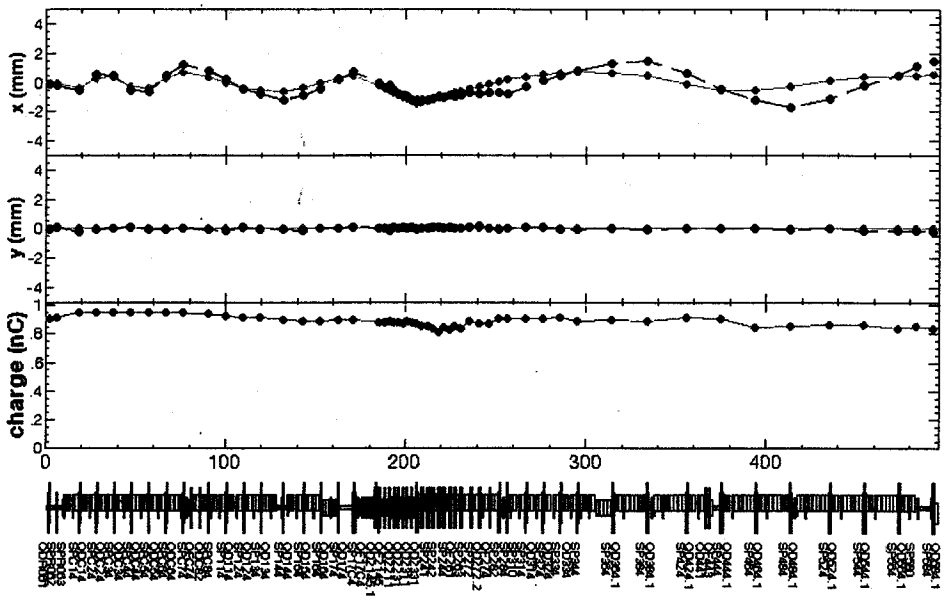
average
K1 0
AF 1
Set ref
Set
x y xy
Read SPDATA
x 5 y 5
Plot
Set ref

Add
EPS .03
Calc
Show Fudge
Set Fudge
Clear Fudge

SXC11
SXC11
-1A

File Edit Window 06/09/2008 23:30:28 Help

Orbit AF^-1 ΔK1 ΔB'



Read Optics
s1(m) 0
s2(m) 500
Set ref
Clear ref
Plot orbit
File sxc11_1s.dat

Steering SX_C1_1
Read
I(A) 0
ΔI(A) 0
Set
Set ref

Steering(X) SXC11
K0 5E-5
Set Clear
Steering(Y) SYC11
K0 -7E-5
Set Clear

Select Q
QDC14
QFC14
QDC24
QFC24
QDC34
QFC34
QDC44
QFC44
QDC54
QFC54

average
K1 0
AF 1
Set ref
Set
x y xy
Read SPDATA
x 5 y 5
Plot
Set ref

Add
EPS .03
Calc
Show Fudge
Set Fudge
Clear Fudge

199

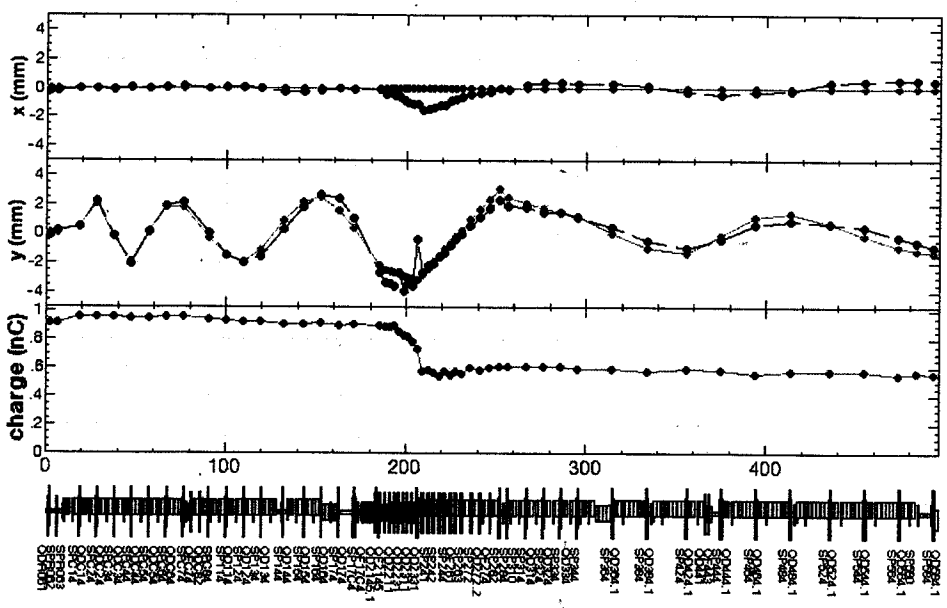
SYC11

+1A

Loss Location
Fudge Factor 有无?

File Edit Window 06/09/2008 23:27:17 Help

Orbit | AF^-1 | ΔK1 | ΔB'



Read Optics
s1(m) 0
s2(m) 500
Set ref
Clear ref
Plot orbit
File syc11_2.dat

Steering SX_C1_1
Read
I(A) 0
ΔI(A) 0
Set
Set ref

Steering(X) SXC11
K0 -1.4E-4
Set Clear
Steering(Y) SYC11
K0 -7E-5
Set Clear

Select Q
QDC14
QFC14
QDC24
QFC24
QDC34
QFC34
QDC44
QFC44
QDC54
QFC54

average
K1 0
AF 1
Set ref
Set
x y xy
Read SPDATA
x 5 y 5
Plot
Set ref

Add
EPS .03
Calc
Show Fudge
Set Fudge
Clear Fudge

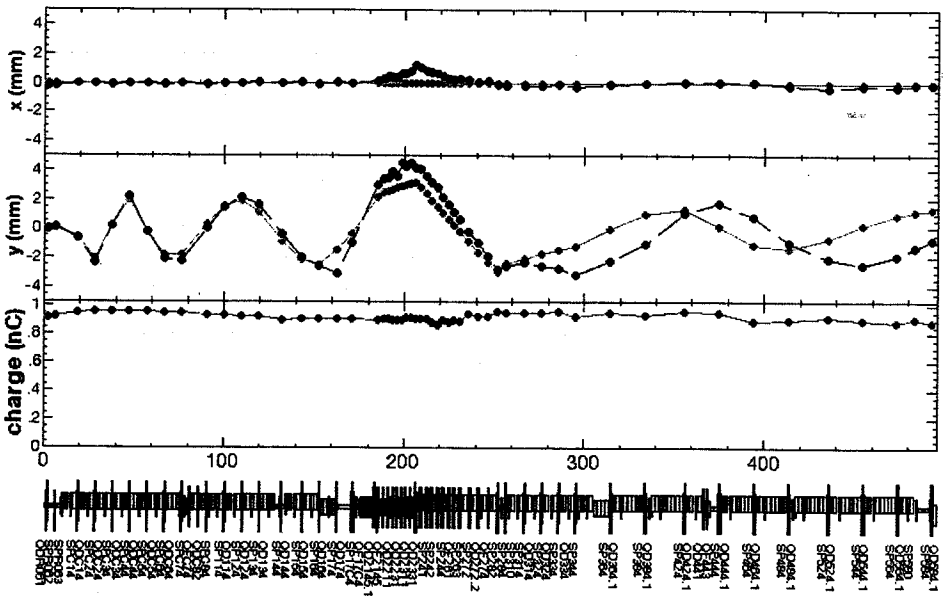
SY:C11

~~5~~A

-1A

File Edit Window 06/09/2008 23:23:57 Help

Orbit | AF^-1 | ΔK1 | ΔB'



Read Optics
s1(m) 0
s2(m) 500
Set ref
Clear ref
Plot orbit
File syc11_1.dat

Steering SX_C1_1
Read
I(A) 0
ΔI(A) 0
Set
Set ref

Steering(X) SXC11
K0 -1.4E-4
Set Clear
Steering(Y) SYC11
K0 7E-5
Set Clear

Select Q
QDC14
QFC14
QDC24
QFC24
QDC34
QFC34
QDC44
QFC44
QDC54
QFC54

average
K1 0
AF 1
Set ref
Set
x y xy
Read SPDATA
x 5 y 5
Plot
Set ref

Add
EPS .03
Calc
Show Fudge
Set Fudge
Clear Fudge

・次回は. Bump を作って. BT にまっすぐ通すようにし.
BT で Matching.
・Target Bump を作る. → 終了.

Trigger Delays

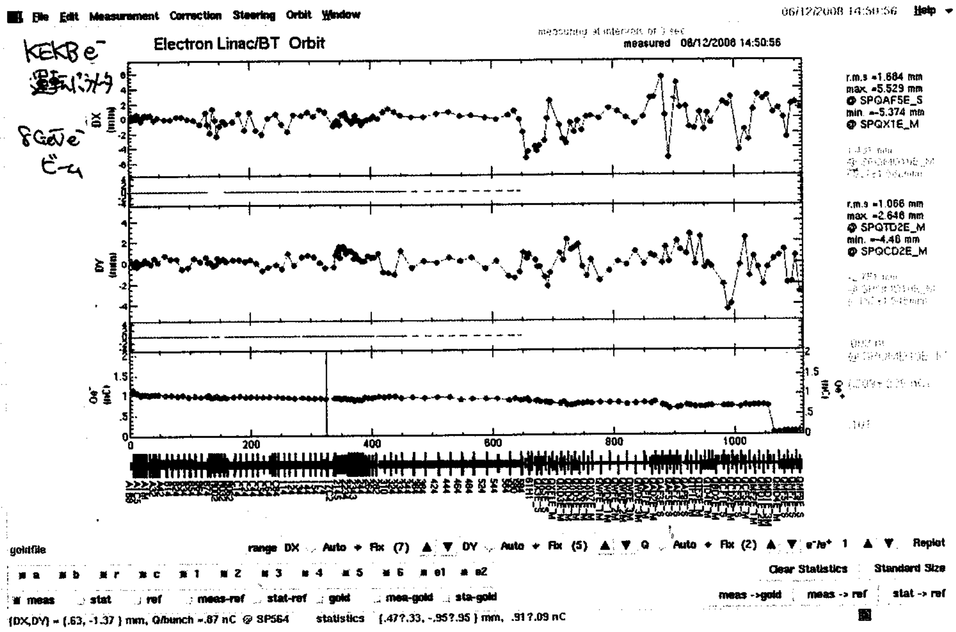
File — Trigger Delays — 10:38 v1

	Toggle AB-sled	Toggle C1-sled	Toggle 25-sled	Toggle Monitor
		Reference	Current	Difference
		Jun10 10:36:22	Jun10 10:36:54	
	KL_A1_RF	97470 ns	97470 ns	0
	OVERALL_A	49062 ns	49062 ns	0
	OVERALL_B	49093 ns	49093 ns	0
	OVERALL_C	50884 ns	50884 ns	0
	OVERALL_1	72890 ns	72890 ns	0
	OVERALL_2	72759 ns	72759 ns	0
	OVERALL_3	72707 ns	72707 ns	0
	OVERALL_4	72819 ns	72819 ns	0
	OVERALL_5	72875 ns	72875 ns	0

Read Ref. | Read Cur. | -96.3 | -17.5 | -8.8 | -1.75 | +1.75 | +8.8 | +17.5 | +96.

2008.6.12 Compatible Beam Study

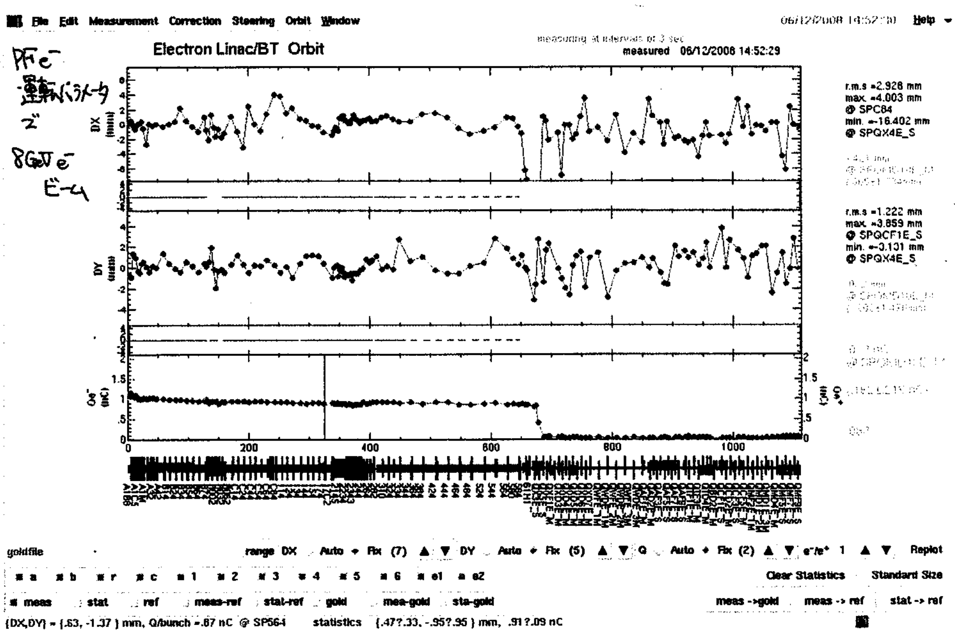
①



↑ これまでの KEKB e⁻ 運転パラメータ。(Q.ST共) → どうやら、正しい大西fudgeが入っていないようだ

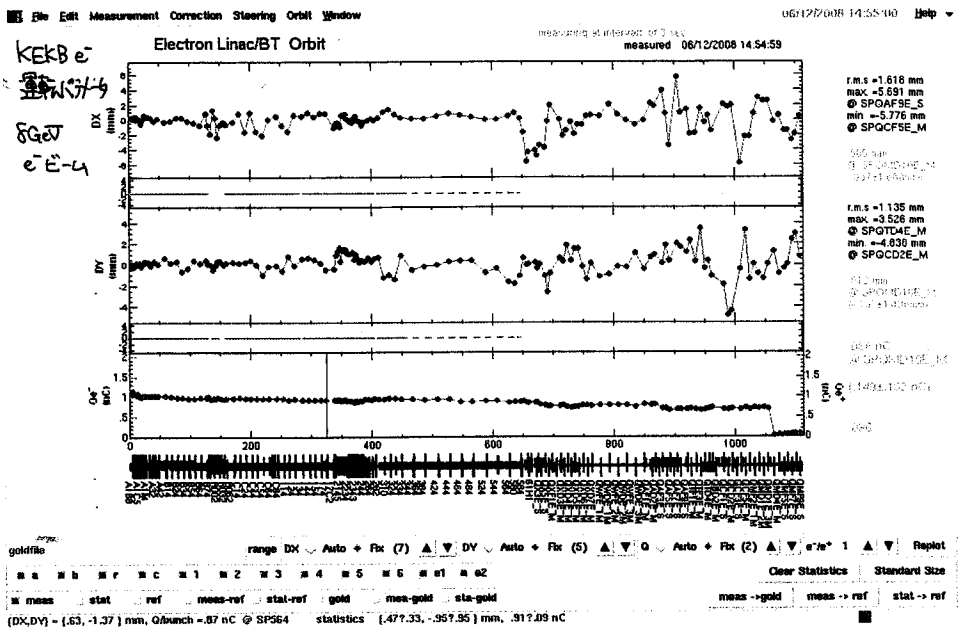
これ以降、KEKB e⁻ 用 8GeV ビーム。

②



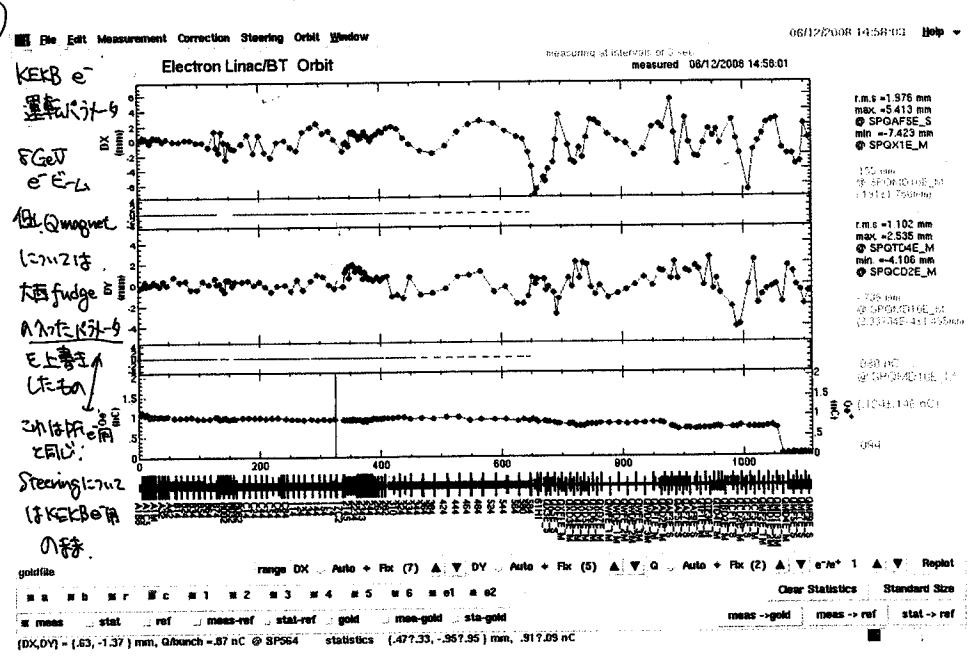
↑ PF e⁻ 用運転パラメータ (Q.ST共) with 8GeV ビーム
magnet のみ 上書きした。

③



↳ ①と同じ状態. 再現性確認

④



↳ Qについては☆とSet (大西fudge). これは陽e⁻用の設定と同じ

Steeringについては KEKBe⁻用のまま.

☆ 6/3 23:13のパラメータ

☆ Collision Tuningに期待

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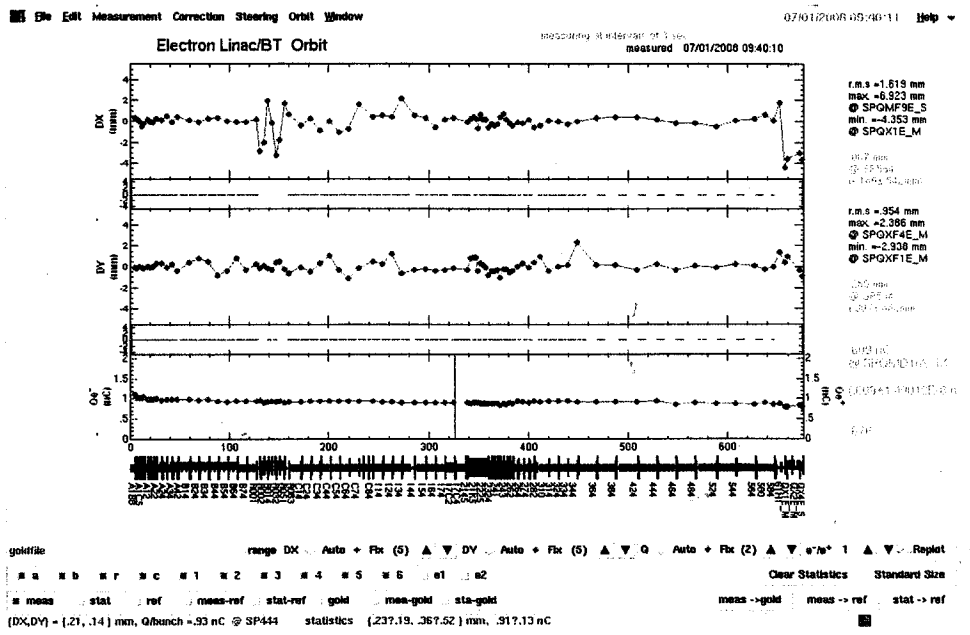
2008.7.1 (火) Beam Study (PF-AI - KEKB e⁻ compatible)

① Target Bump (PF).

KEKB e⁻ ビーム (軌道補正後)



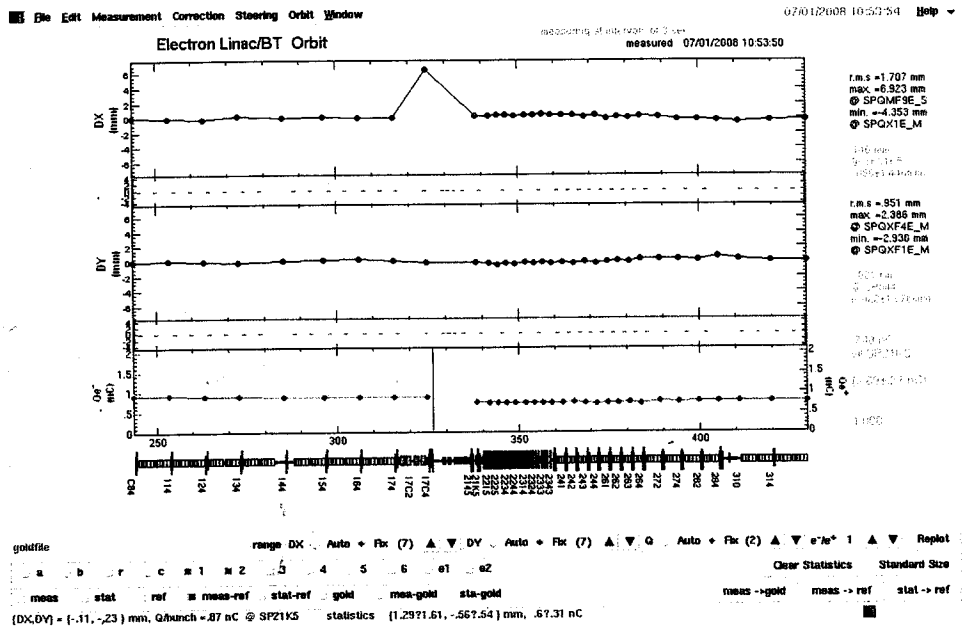
~~PX_1N_C1~~ 9.2 ~~PX_1N_C5~~ 1.424 ~~PX_21_45~~ 5.2 ~~PY_21_45~~ 0.4

(PX)1N C1	(PX)1N C5	(PX)2145	(PY)2145	(Xpos)1N C4	(Xpos)2145	(Xpos) 274 ~~2743~~	(Ypos) 274 2743
0	0	0	0	0.193	-0.097	-0.441	-0.812
8.0				5.723	4.613	0.933	
0	0	0	0	0.064	-0.263	0.011	0.429
8.0				5.997	4.796	-7.504	1.663
8.5				5.371	4.606	-7.305	1.930
8.5				6.161	4.937	-7.856	1.429
9.0				6.293	3.099		
8.0				5.73			
8.5				6.04			
9.0				6.30			
9.5				6.73			
8.0				5.83			
8.5				6.11			
9.0				6.48			
9.5				6.71			

Xpos 21K5

9.0	0.0		
9.0	1.4		
⋮	⋮		
9.0	5.5		0.310
8.0	4.5		
7.5	4.5		
7.0	4.5		−0.137
7.0	4.5	4.75	
7.0	4.8	4.8	0.4

なぜ、前とCorrelationの係数が異なっているのか？



11:02

ターゲット

PX 1nC1	② 21K5
9.0	0.719
8.5	0.782
8.0	0.715
8.2	0.774
8.4	

Averaging 98

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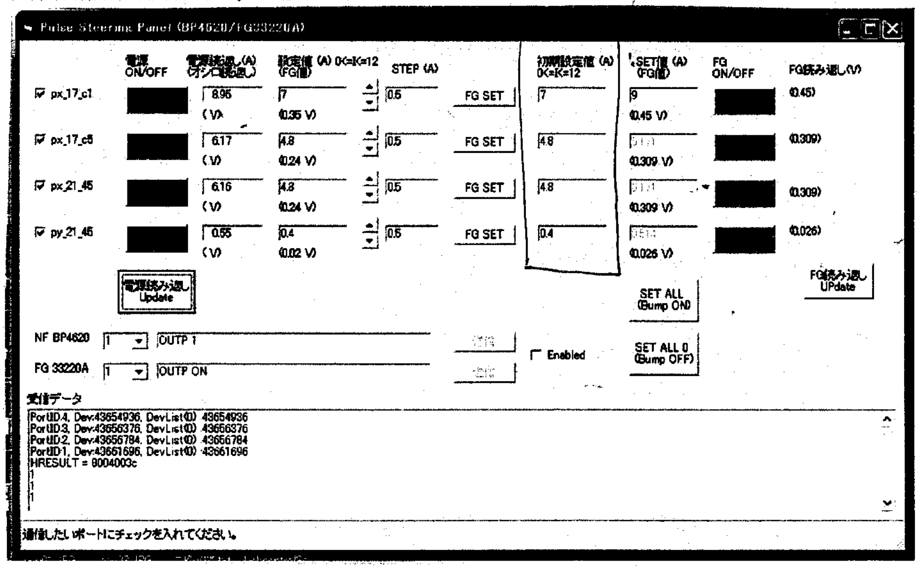
ターゲット

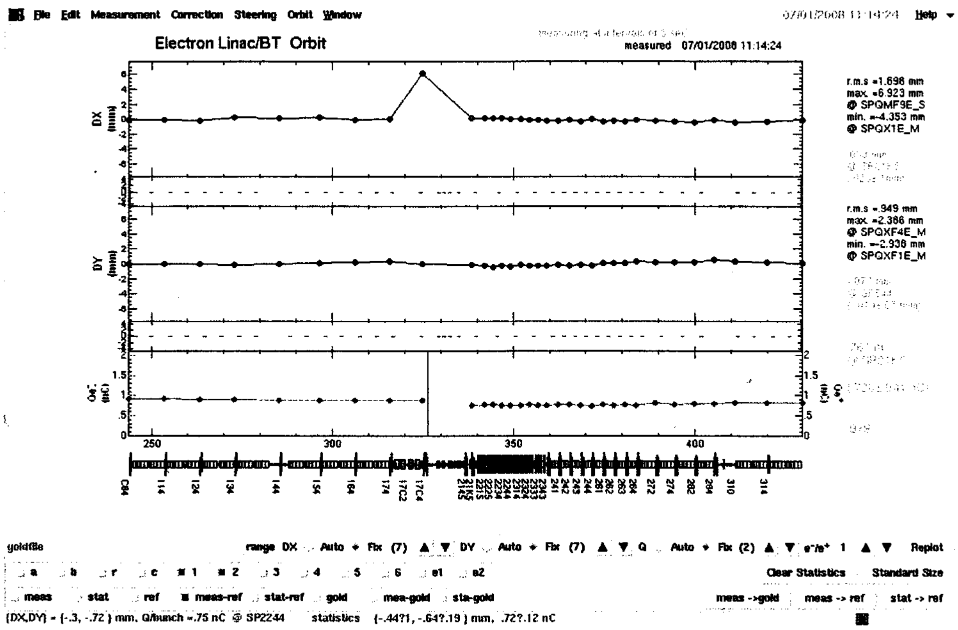
PX 17C1	Q 21K5
8.0	0.703
8.2	0.744
8.4	0.765
8.6	0.769
8.8	0.750
9.0	0.720
9.2	0.652

→ 8.5 0.769 ビーム透過率 Max.

(0.808 ターゲットOut) (0.881 ターゲットOut & Bump off)



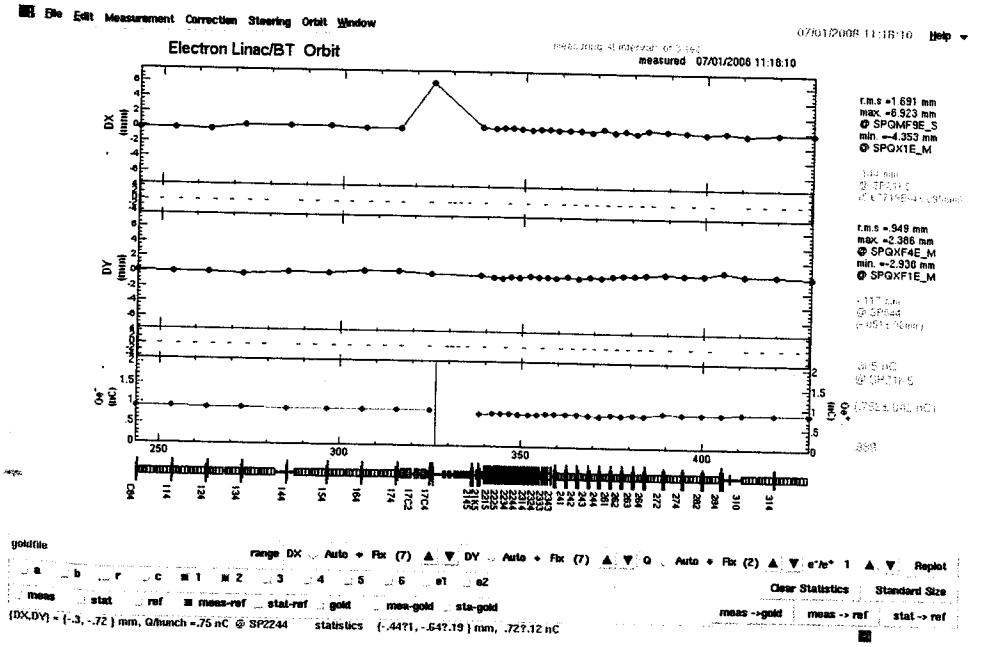
ターゲットIN で Q 21K5 が Max



Q = 0.769 nC

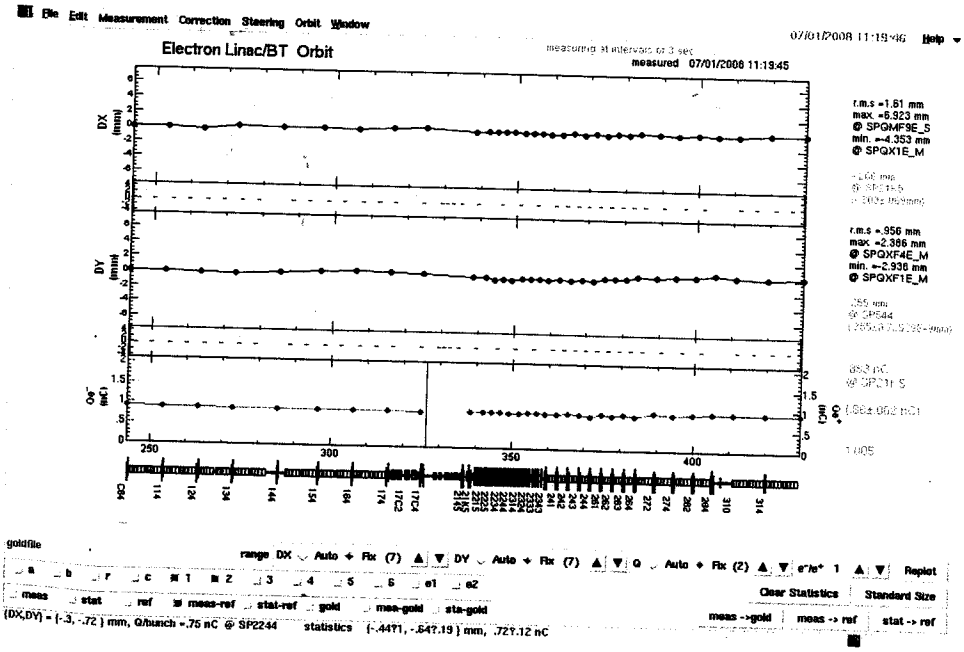
透過率 87.3%

ターゲット Out & Bump ON



Q=0.808nC
透過率
91.7%

ターゲット Out & Bump Off



Q=0.881nC
このときを
透過率
100%
とした。