

課題: ~~e<sup>+</sup>/e<sup>-</sup>~~ 同時入射用 Optics Study

14:35

①  $7/2$  の Study 最終結果を再現 (P.47)

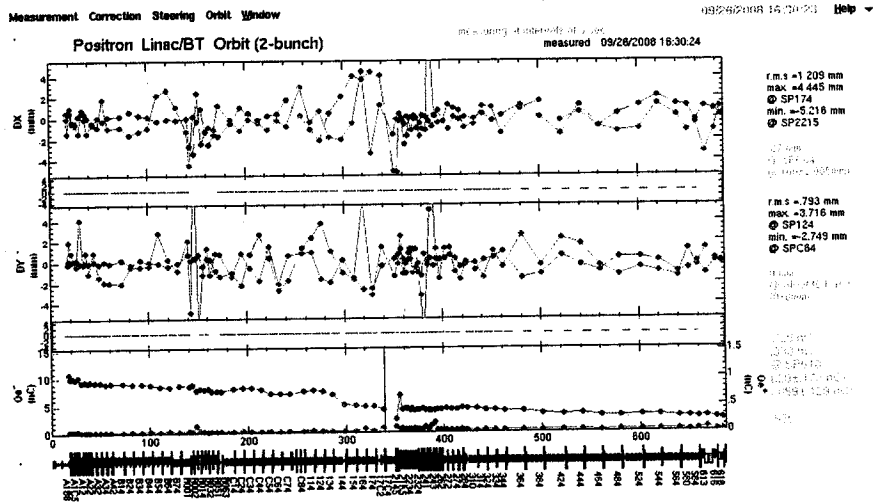
② A.B が出た, 1~5 が出た (7. e<sup>+</sup> optics base 1=15, 2, 3 の 2. pt に入る通可と. どうしたか? 見え).

★  $7/2$  の file を bis の load してやると. 2 バッチ目が, 8~10ms 遅れてしまった. → 解決

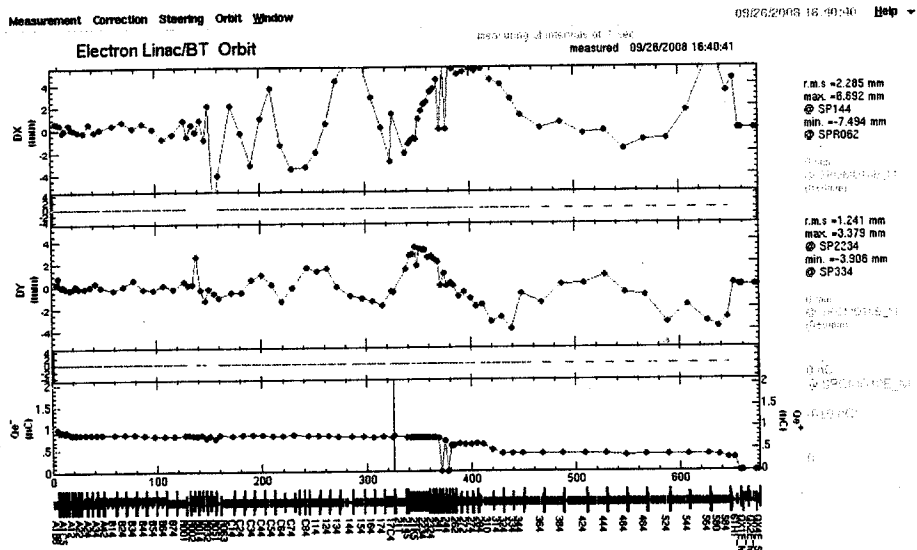
$7/2$  の file を ("23:30" を load)

C.1 が出たの St 17. "last phi. x com" を load. -all

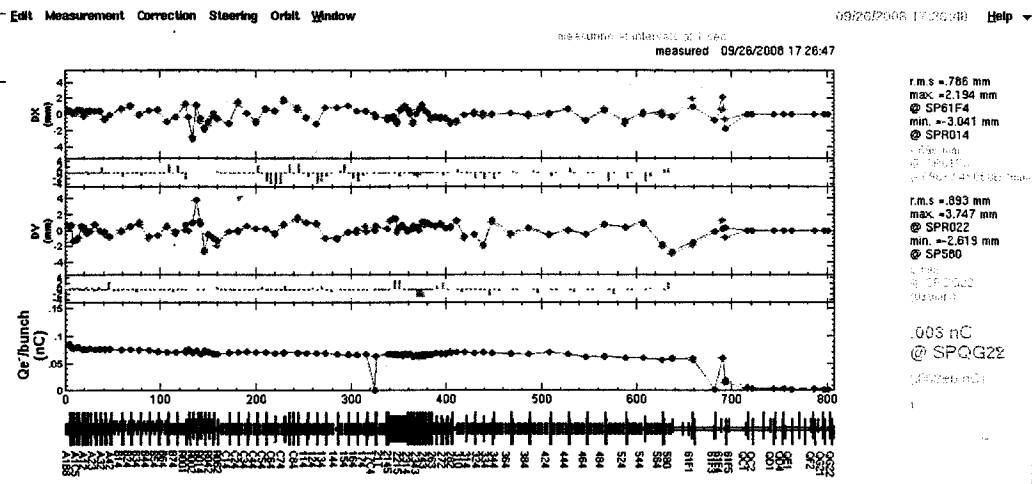
e<sup>+</sup>



e<sup>-</sup>



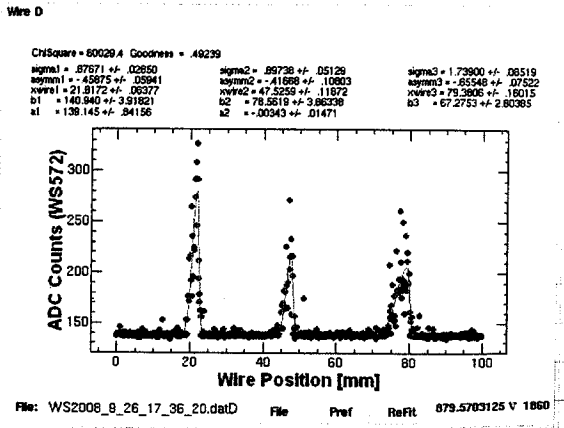
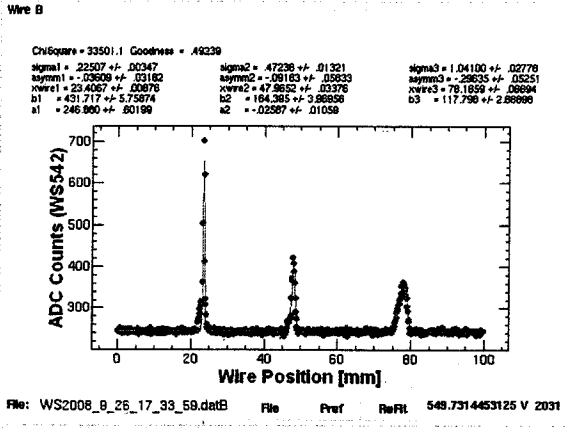
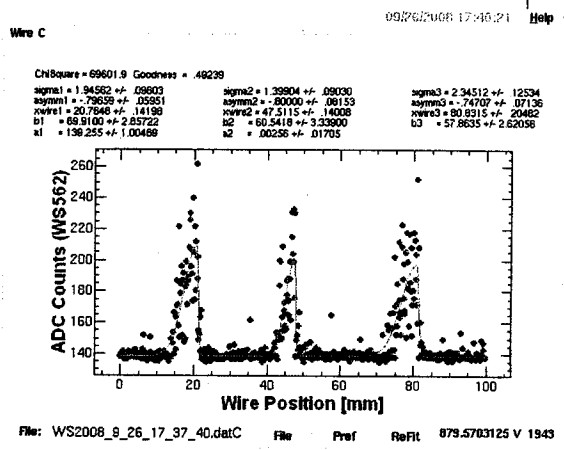
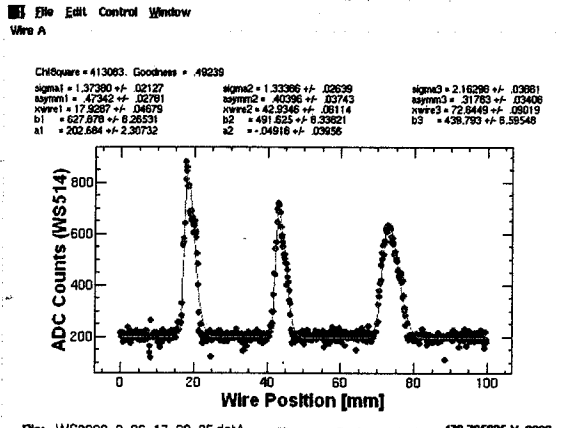
pf a 1



pf a 1 での 結構 塊 作 通す ため.

pf での Matching 合わせ

53.2



Select Matching zone on 172.19.66.33:0

File Edit Window 09/26/2008 17:41:32 Help

Wire Scan Optics Calc X phase space at Wire A

Wire Scan Optics Calculate Matching X phase space at Wire A

Wire Scan Optics Calculate Matching X phase space at Matching Point

Results of Measurement

$\beta_x$ @AC574+1 [m] :	11.613	$\beta_y$ @AC574+1 [m] :	98.275
$\alpha_x$ @AC574+1 :	-5.561	$\alpha_y$ @AC574+1 :	-4.183
$\epsilon_x$ [m] :	2.9580E-8	$\epsilon_y$ [m] :	9.1690E-8
$\gamma\epsilon_x$ [T.mm.mrad] :	144.716	$\gamma\epsilon_y$ [T.mm.mrad] :	446.583
Bmag x :	13.644	Bmag y :	6.021
EBmag x :	4.0359E-7	EBmag y :	5.5206E-7
$\gamma$ CBmag x :	1974.496	$\gamma$ CBmag y :	2700.900

Optics Plot

Wire Selection

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

4-wire:ABCD

NonLinearFit Err(meas), nG n: 0 Err(opt) (%): 0

\*Calculate Optics\* Save All Parameters

Omag values were SAVED to

The Calculation for Q-Mag values are RESET to saved value.

File Edit Window 09/26/2008 17:41:35 Help

Wire Scan Optics Calculate Matching

Matching Residual = 4.3769E-28

Matching Conditions

QD544 QF584: $\beta_x$ <	60.00	34.18415
QD544 QF584: $\beta_y$ <	60.00	28.12407

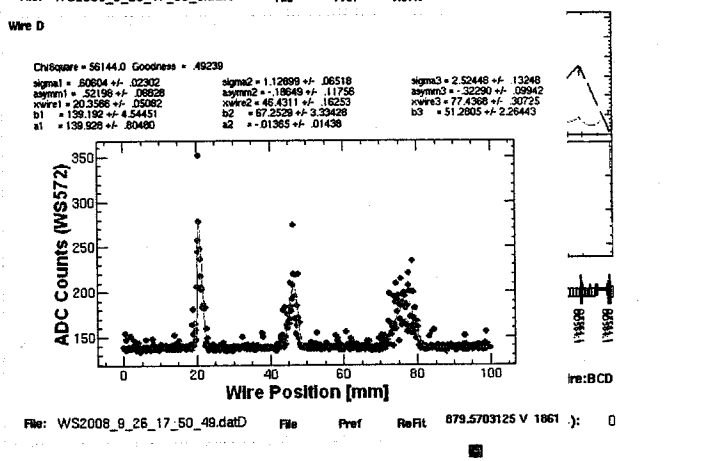
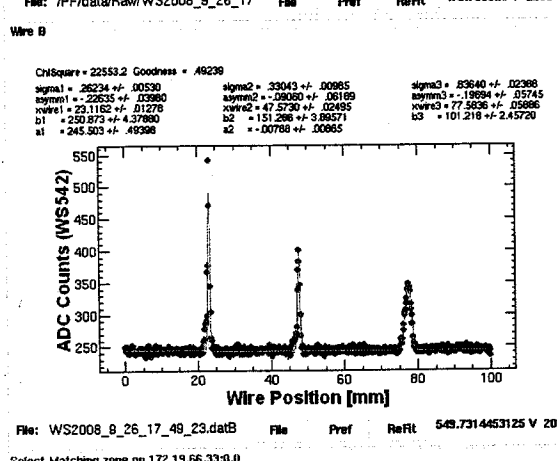
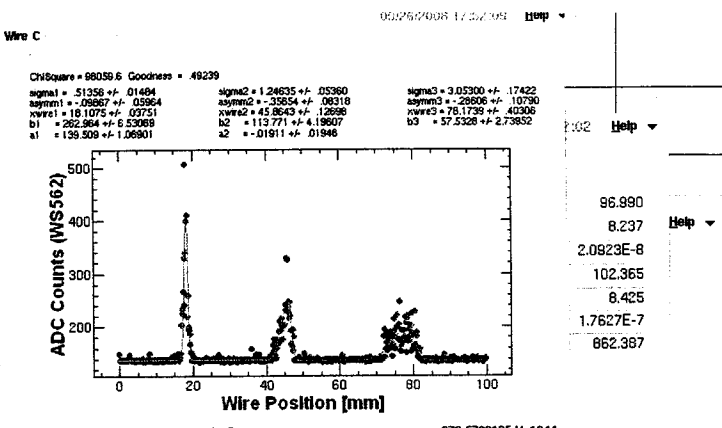
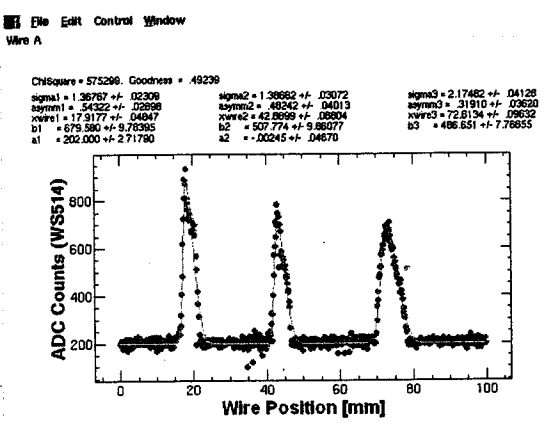
Strength of Free Qmag (Q\*)

Matching Calculation

- Calc Matching
- Recover Calculation
- Reset Calculation
- Q-mag Set
- Q-mag Read&Write
- Read Q-Mag from File
- Save Q-Mag to File

The Calculation for Q-Mag values are RESET to saved value.

Matching is set.



Select Matching zone on 172.19.66.330.0

Omega values were SAVED to /data1/KEKB/Wire/LINAC/sectors/PF/data/Qvalue/qname\_2008\_9\_26\_17\_48\_1.dat0

716	718	720	722	724	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	788	790	792	794	796	798	800
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Omega values were SAVED to /data1/KEKB/Wire/LINAC/sectors/PF/data/Qvalue/qname\_2008\_9\_26\_17\_48\_1.dat0



Matching 実行.

$$\left\{ \begin{array}{l} QD\ 48-4\ 10.3896 \rightarrow 11.399\ A \\ QF\ 48-4\ 10.681 \rightarrow 11.681\ A \end{array} \right.$$

LC L2. Matching 実行.

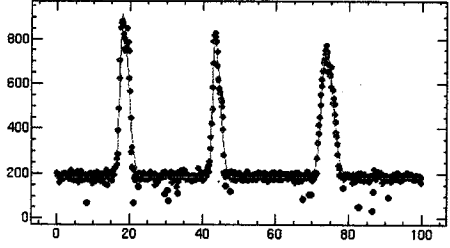
Set

File Edit Control Window

Wire A

ChiSquare = 415368. Goodness = 49228

sigma1 = 1.5313 +/- 0.1740	sigma2 = 1.05243 +/- 0.1816	sigma3 = 1.57431 +/- 0.2550
sigma1 = 36903 +/- 10826	sigma2 = 37926 +/- 10326	sigma3 = 21248 +/- 23234
xwire1 = 17.9094 +/- 0.4007	xwire2 = 43.2763 +/- 0.4451	xwire3 = 73.8103 +/- 0.6223
b1 = 724.474 +/- 9.1818	b2 = 614.185 +/- 9.65828	b3 = 571.485 +/- 7.84489
a1 = 186.870 +/- 2.32548	a2 = 0.0154 +/- 0.0691	

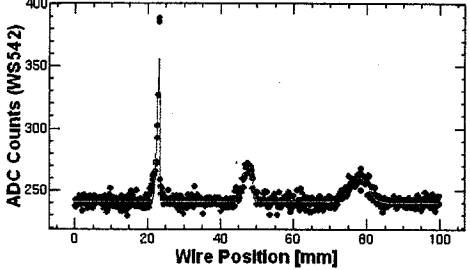


File: WS2008\_9\_26\_18\_54\_12.datA File Pref ReFit 459.77539625 V 2207

Wire B

ChiSquare = 13214.0 Goodness = 49239

sigma1 = 35519 +/- 0.1038	sigma2 = 1.24714 +/- 0.7756	sigma3 = 2.64648 +/- 1.8914
sigma1 = 83302 +/- 11901	sigma2 = 2.26911 +/- 1.2256	sigma3 = 1.5884 +/- 1.2588
xwire1 = 23.2445 +/- 0.7669	xwire2 = 47.3014 +/- 1.8824	xwire3 = 79.2281 +/- 4.0551
b1 = 115.188 +/- 4.26914	b2 = 26.8546 +/- 3.3979	b3 = 20.1451 +/- 1.07464
a1 = 241.891 +/- 38940	a2 = -0.0731 +/- 0.0704	



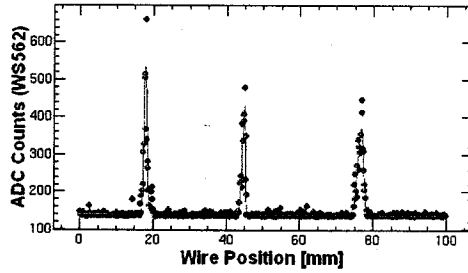
File: WS2008\_9\_26\_18\_55\_43.datB File Pref ReFit 549.7314453125 V 2036

Select Matching zone on 172.19.66.33:0.0

Wire C

ChiSquare = 112802. Goodness = 49239

sigma1 = 40158 +/- 0.0824	sigma2 = 44992 +/- 0.1329	sigma3 = 78144 +/- 0.2228
sigma1 = 40755 +/- 0.4797	sigma2 = 49715 +/- 0.5801	sigma3 = 37077 +/- 0.5499
xwire1 = 17.3003 +/- 0.2355	xwire2 = 44.3529 +/- 0.3074	xwire3 = 79.3132 +/- 0.5265
b1 = 391.349 +/- 7.91009	b2 = 291.583 +/- 7.89250	b3 = 252.652 +/- 5.66177
a1 = 141.985 +/- 1.11963	a2 = -0.0394 +/- 0.1944	

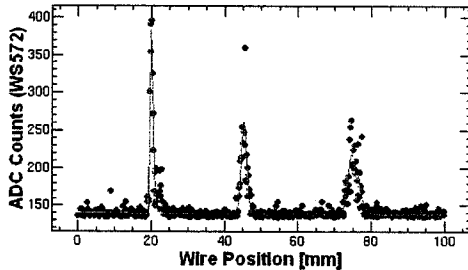


File: WS2008\_9\_26\_18\_57\_0.datC File Pref ReFit 679.5703125 V 1947

Wire D

ChiSquare = 72357.0 Goodness = 49239

sigma1 = 42082 +/- 0.1302	sigma2 = 74488 +/- 0.3324	sigma3 = 1.36774 +/- 0.7188
sigma1 = 71326 +/- 0.5093	sigma2 = 10415 +/- 0.6293	sigma3 = 31132 +/- 1.0073
xwire1 = 19.6301 +/- 0.2362	xwire2 = 45.1970 +/- 0.6475	xwire3 = 74.5636 +/- 1.1121
b1 = 242.180 +/- 6.40821	b2 = 120.951 +/- 4.65232	b3 = 77.7889 +/- 3.42678
a1 = 141.422 +/- 89946	a2 = -0.2111 +/- 0.1577	



File: WS2008\_9\_26\_18\_57\_44.datD File Pref ReFit 679.5703125 V 1064

Qmag values were Saved to filata1/KEKB/wire/LINAC/sector5/PF/data/Qvalue/qname\_2008\_9\_26\_18\_55\_43.dat0

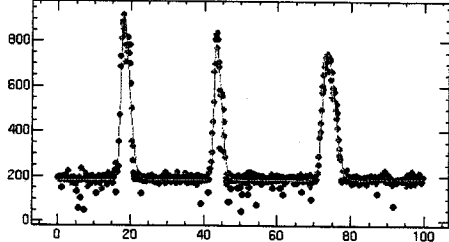
The Calculation for Q-Mag values are RESET to saved value.

File Edit Control Window

Wire A

ChiSquare = 605953. Goodness = 49220

sigma1 = 1.18113 +/- 0.2002	sigma2 = 1.00443 +/- 0.2345	sigma3 = 1.61819 +/- 0.3159
sigma1 = 44009 +/- 0.2303	sigma2 = 41518 +/- 0.4362	sigma3 = 27636 +/- 0.9225
xwire1 = 17.8309 +/- 0.4693	xwire2 = 43.1362 +/- 0.5384	xwire3 = 73.3970 +/- 0.7570
b1 = 728.701 +/- 11.1339	b2 = 598.781 +/- 11.9371	b3 = 569.107 +/- 9.43053
a1 = 187.494 +/- 2.89356	a2 = 0.1938 +/- 0.04919	

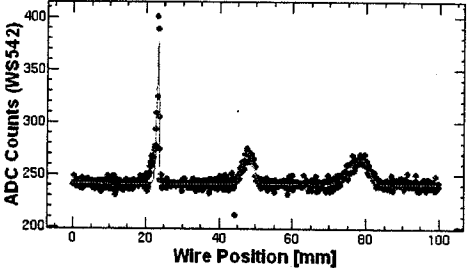


File: WS2008\_9\_26\_19\_7\_42.datA File Pref ReFit 459.77539625 V 2208

Wire B

ChiSquare = 14750.7 Goodness = 49239

sigma1 = 32989 +/- 0.0902	sigma2 = 1.36677 +/- 0.8455	sigma3 = 2.53066 +/- 1.4572
sigma1 = 52729 +/- 28002	sigma2 = 0.7729 +/- 1.2598	sigma3 = 25545 +/- 1.1082
xwire1 = 23.3559 +/- 0.2486	xwire2 = 48.0067 +/- 2.1545	xwire3 = 79.9355 +/- 3.4530
b1 = 134.489 +/- 3.21707	b2 = 29.5357 +/- 1.54348	b3 = 24.0802 +/- 1.18111
a1 = 242.814 +/- 40710	a2 = -0.0804 +/- 0.0740	



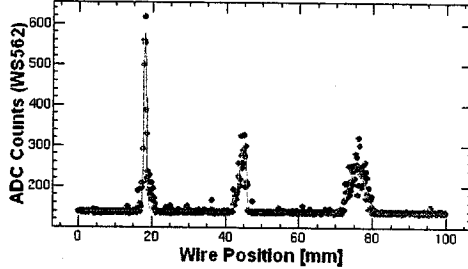
File: WS2008\_9\_26\_19\_6\_58.datB File Pref ReFit 549.7314453125 V 2036

Select Matching zone on 172.19.66.33:0.0

Wire C

ChiSquare = 111085. Goodness = 49238

sigma1 = 37771 +/- 0.0785	sigma2 = 95008 +/- 0.2672	sigma3 = 2.04214 +/- 0.7308
sigma1 = 29055 +/- 0.4249	sigma2 = 52038 +/- 0.6857	sigma3 = 0.1333 +/- 0.7223
xwire1 = 17.8022 +/- 0.1971	xwire2 = 45.1549 +/- 0.7950	xwire3 = 75.9691 +/- 1.8061
b1 = 445.867 +/- 9.06169	b2 = 153.893 +/- 5.10929	b3 = 116.592 +/- 3.52024
a1 = 141.734 +/- 1.12085	a2 = -0.4939 +/- 0.1993	

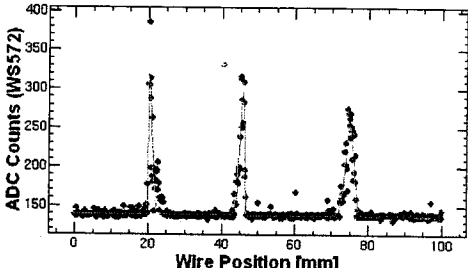


File: WS2008\_9\_26\_19\_6\_16.datC File Pref ReFit 679.5703125 V 1948

Wire D

ChiSquare = 66263.0 Goodness = 49239

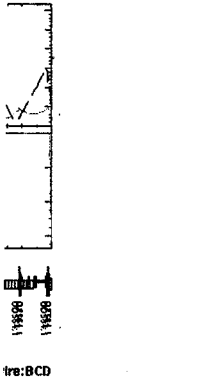
sigma1 = 49787 +/- 0.1759	sigma2 = 65568 +/- 0.2294	sigma3 = 1.10659 +/- 0.4122
sigma1 = 78518 +/- 0.3736	sigma2 = 51415 +/- 0.6298	sigma3 = 14329 +/- 0.7585
xwire1 = 20.0302 +/- 0.2632	xwire2 = 45.2876 +/- 0.6299	xwire3 = 75.0324 +/- 1.0299
b1 = 181.408 +/- 5.48134	b2 = 157.140 +/- 4.74019	b3 = 115.167 +/- 3.69336
a1 = 140.283 +/- 98205	a2 = -0.2542 +/- 0.1497	



File: WS2008\_9\_26\_19\_5\_32.datD File Pref ReFit 679.5703125 V 1065

Matching OK

73.062  
-5.953  
4.4875E-8 133  
219.548 10  
6.215  
2.7889E-7  
1364.445



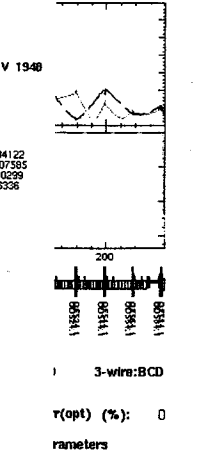
Calculate Optics Save All Parameters

Qmag values were Saved to filata1/KEKB/wire/LINAC/sector5/PF/data/Qvalue/qname\_2008\_9\_26\_18\_55\_43.dat0

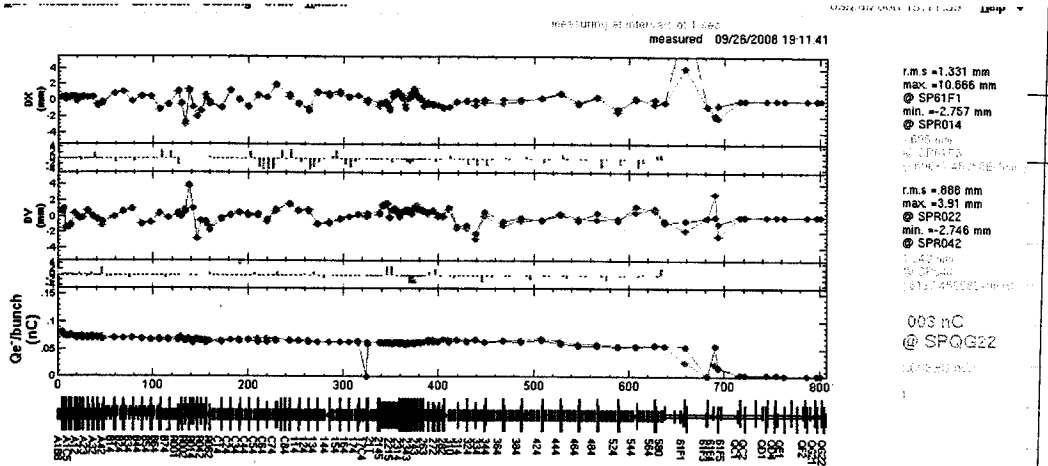
The Calculation for Q-Mag values are RESET to saved value.

19:09:11 Help

[m]: 11.822  
-5.43  
6.7538E-8  
330.420  
[d]: 1.143  
7.7183E-8  
377.607

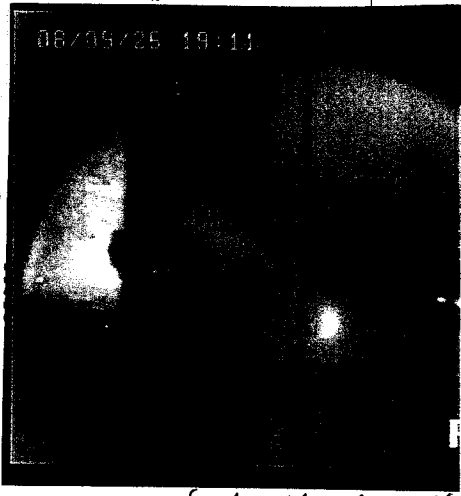
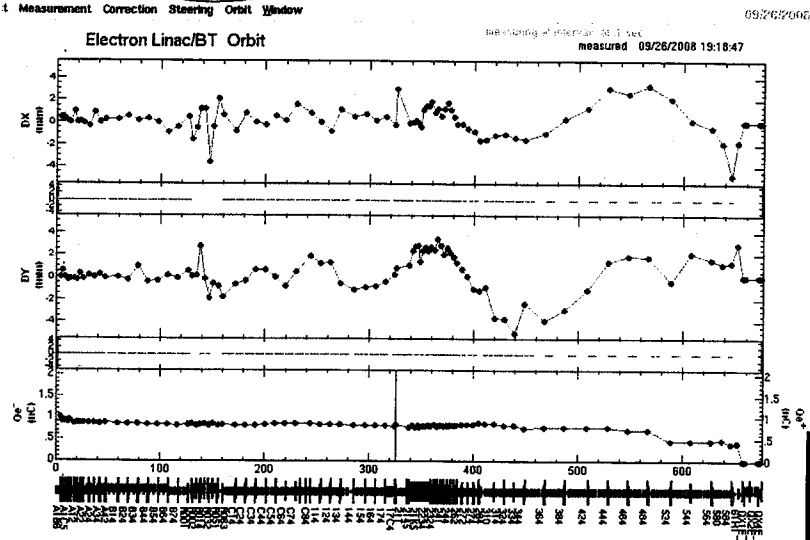


3-wire:BCD  
r(opt) (%): 0  
Parameters



pfal  
軌道

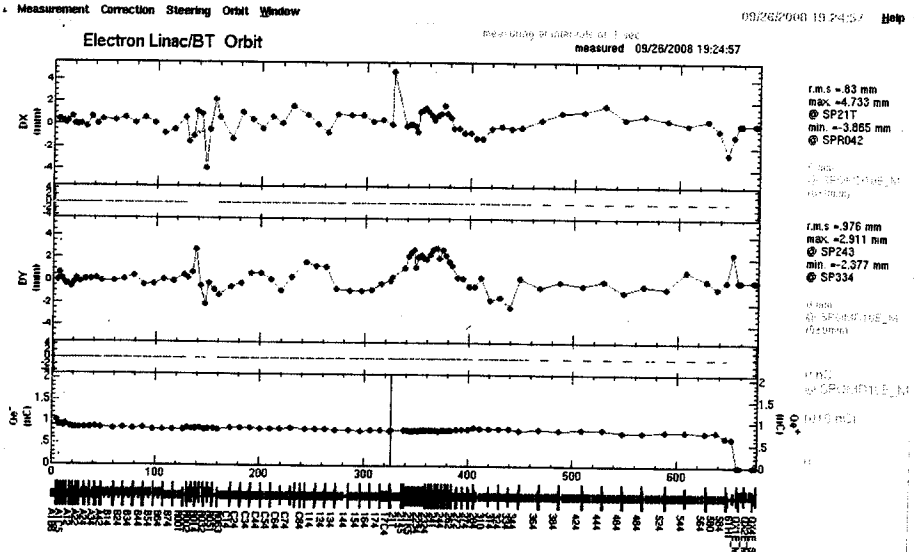
KEKB e<sup>-</sup> 軌道修正



pfal Matching 後

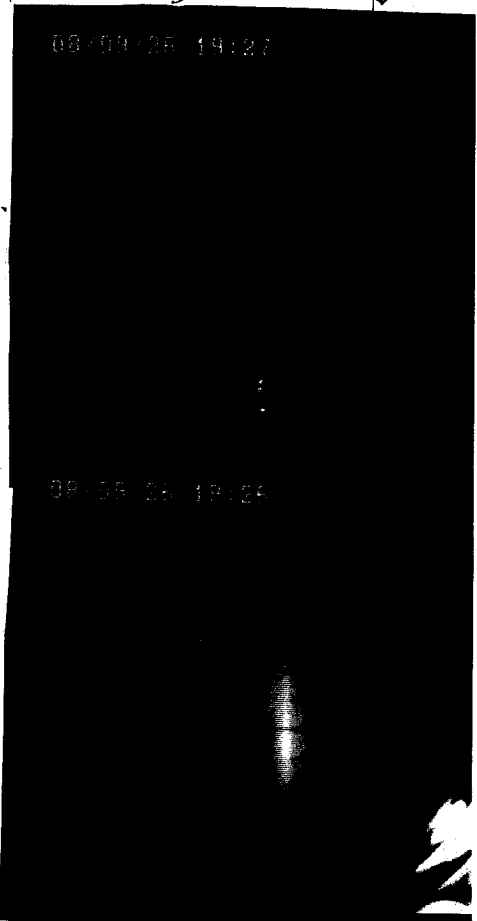
SC55-2

↓ 軌道を平らに可



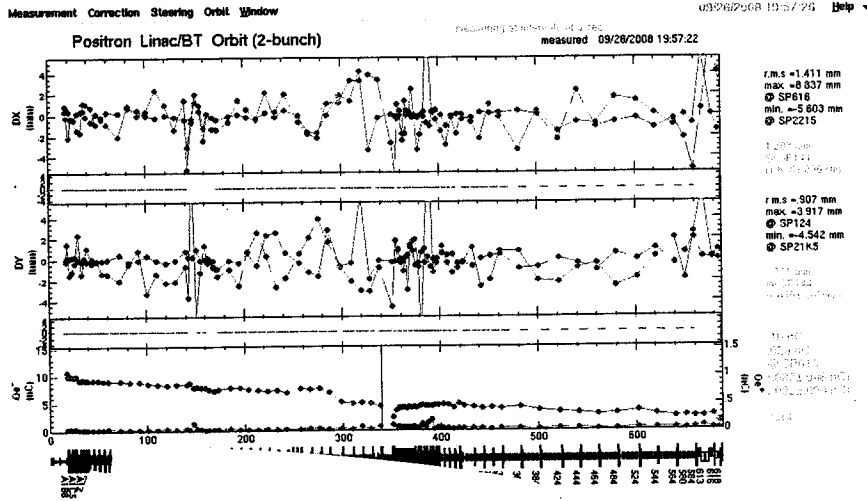
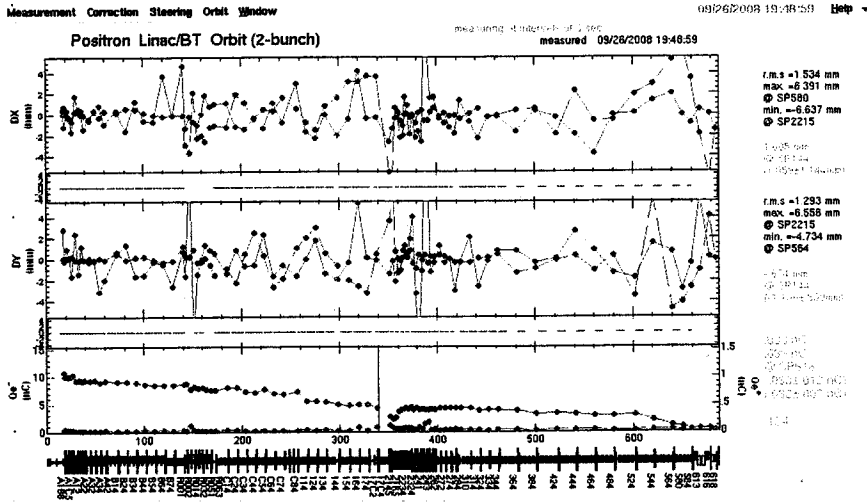
SX281 -0.502 → +0.500  
SY281 1.0 → 3.5  
SX384 0.299 → 0  
SY531 -1.999 → -3.5

SC-57-2



87

KEKB  $e^+e^-$  404 調整



軌道を  
平らにする

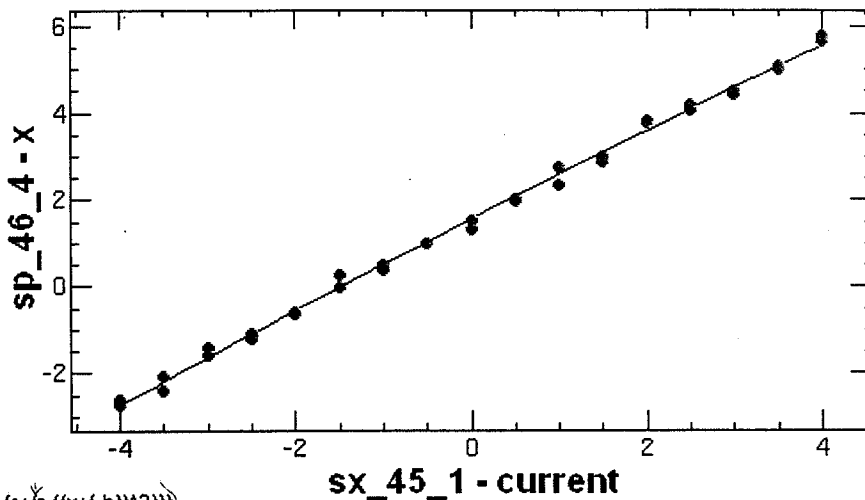
$BX484 -0.177 \rightarrow 0.023$        $SX55T -1.999 \rightarrow 0$   
 $BY484 -0.06 \rightarrow -0.36$        $SY55T 0.602 \rightarrow -2.199$   
 $SX531 -3 \rightarrow 0$   
 $SY531 -3.5 \rightarrow 0$



55 )      58-4  
"data 4754 all" (= save (e+)) Magnet save

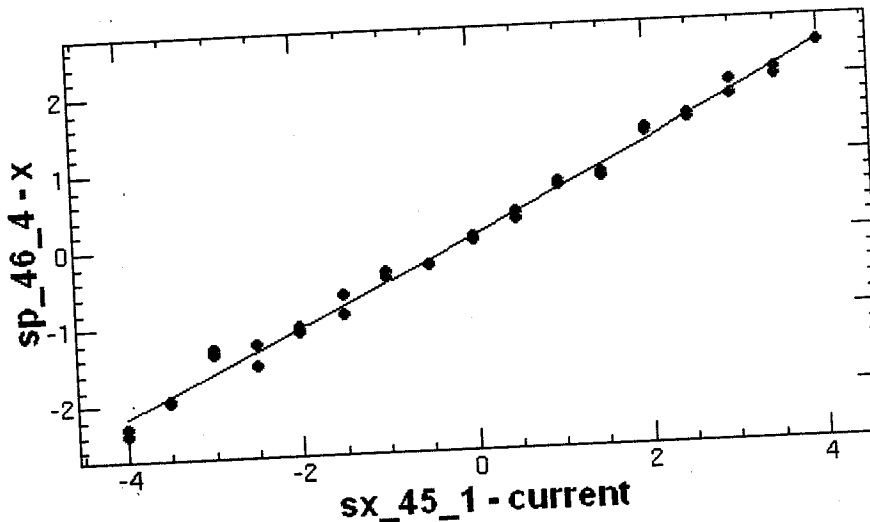
② 5セクタ-軌道FB用 data 取り。  
 (Steering 電流 vs. 直後のBPM位置測定)

File Edit Window PFAI 09/26/2008 20:37:39 Help  
 ChiSquare = .64788 Goodness = .46621  
 a = -.00913 +/- .00464 b = 56.7483 +/- 28.7028 c = 30.9655 +/- 14.8574



sx\_45\_1vssp\_46\_4 on 172.19.66.33:0.0

File Edit Window kbe 09/26/2008 21:42:01 Help  
 ChiSquare = .49357 Goodness = .46565  
 a = .00578 +/- .00438 b = -49.563 +/- 37.2797 c = -14.156 +/- 10.6432



sx\_45\_1vssp\_46\_4 on 172.19.66.33:0.0



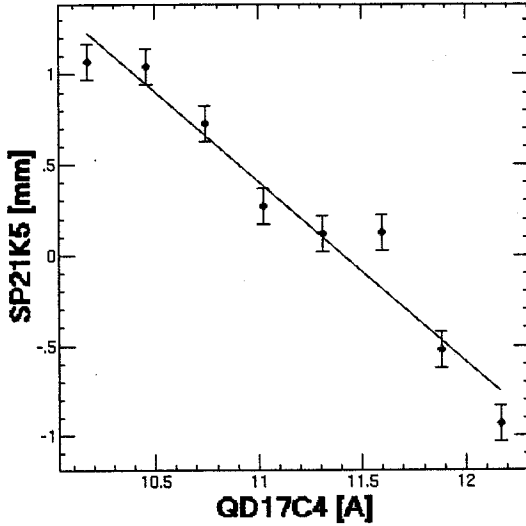
89

2008-9-29

SP21-T Quad BPM

Edit Window

09/29/2008 06:19:31 Help



Condition  
BPM to be Calibrated :  
SP21T

Direction :  
Horizontal Vertical

Used Components :  
BPM : SP21T  
Steering : {{"SX171",1}}

from	0	0	0	0	0
to	4	4	4	4	4
number	4	4	4	4	4

Q magnet: QD17C4

from	-1	-1	-1	1	1
to	1	1	1	1	1
number	8	8	8	8	8

next remem. save

GO READ

Display  
BPM : Steering step :  
SP21K5 1

Result  
When the beam is at the Q center :  
BPM reading [mm]: 2.75208 18 18 3 3  
error [mm]: .27876 6 6 3 3

Last BPM taken into account :  
SP2314

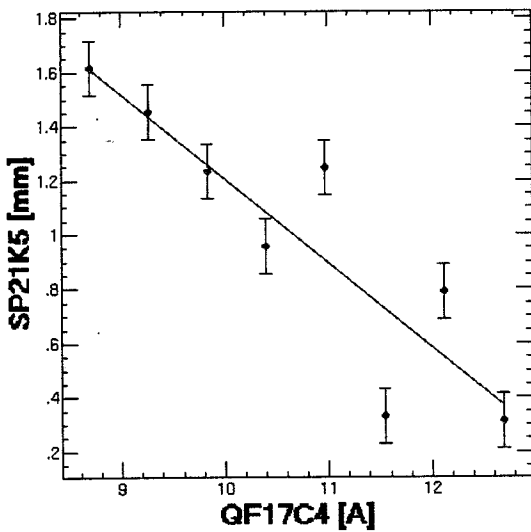
ref. curr. thresh. :	.7	.7	.7	.7	.7
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Fit Chk I Save

it on icg5:0.0

t Window

09/29/2008 06:54:53 Help



Condition  
BPM to be Calibrated :  
SP21T

Direction :  
Horizontal Vertical

Used Components :  
BPM : SP21T  
Steering : {{"SY171",1}}

from	-4	4	4	1	.4	4
to	1	1	1	1	1	1
number	4	4	4	1	4	4

Q magnet: QF17C4

from	-2	2	2	2	-2	2
to	2	2	2	2	2	2
number	8	3	8	1	8	3

next remem. save

GO READ

Display  
BPM : Steering step :  
SP21K5 1

Result  
When the beam is at the Q center :  
BPM reading [mm]: -.02473 3 3 1 3 3  
error [mm]: .00817 7 7 7 7 7

Last BPM taken into account :  
SP2324

ref. curr. thresh. :	.7	.7	.7	.7	.7
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Fit Chk I Save

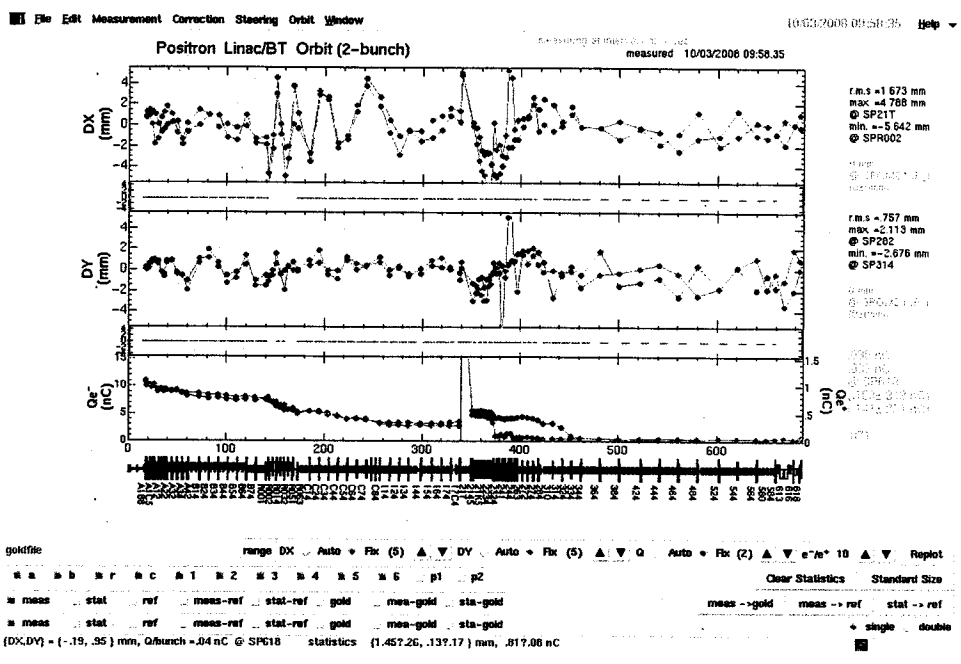
cg5:0.0

2008.10.3 (金)  $e^+$  target前子ビーム ( $e^+/e^-$ (KEKB PF)) 調整

飯田, 十川, 水川

Q259

PF-KAKB 芝田 Optics / steering @ の子  $e^+$  ビームを



Steering BX-A1-B8 と調整するたけにはよいはず

AB だけ  $Q_e$  が大きすぎる子ビームに注目し、その入射部直後の steering 調整

QDD_A3-4	15.853 A	→	18.883 A	に変更
BY-A1-B8	0 A	→	-0.389 A	

これで J-arC 前までは かなり改善した。

