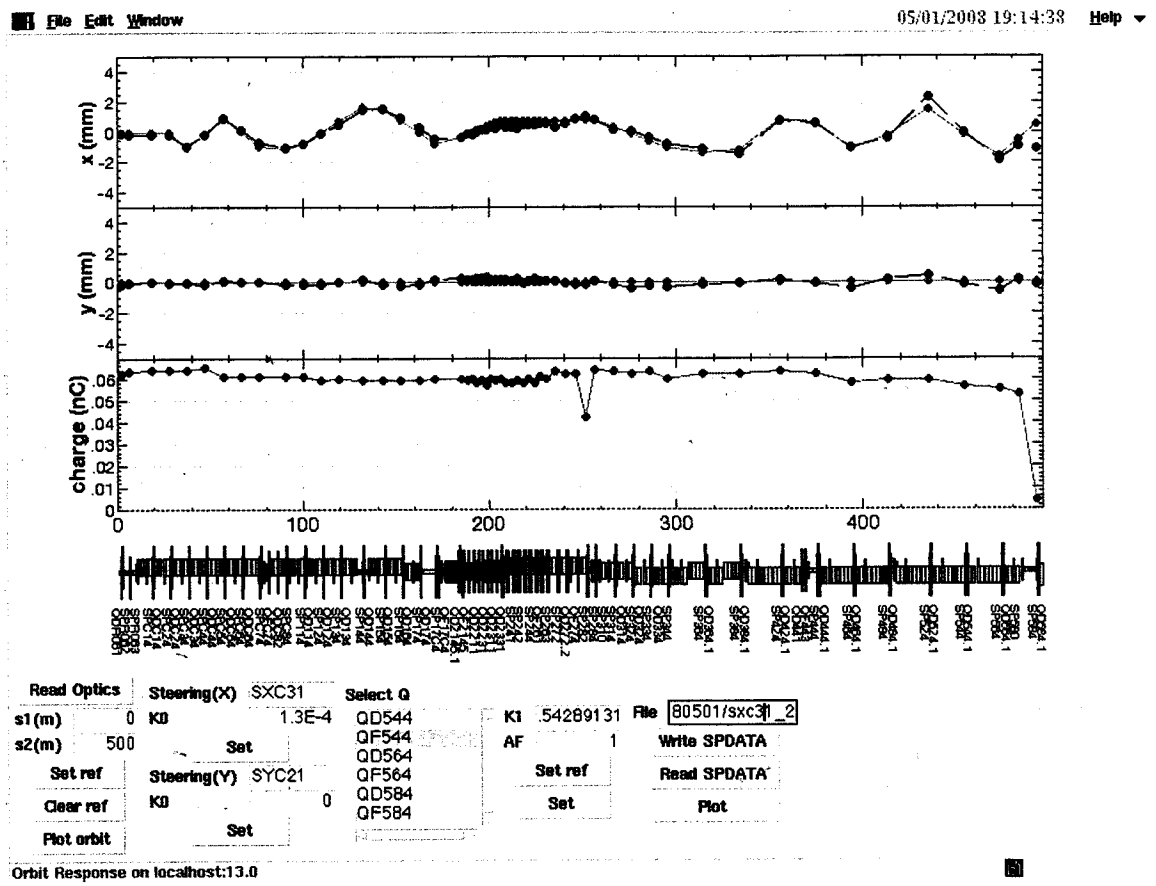
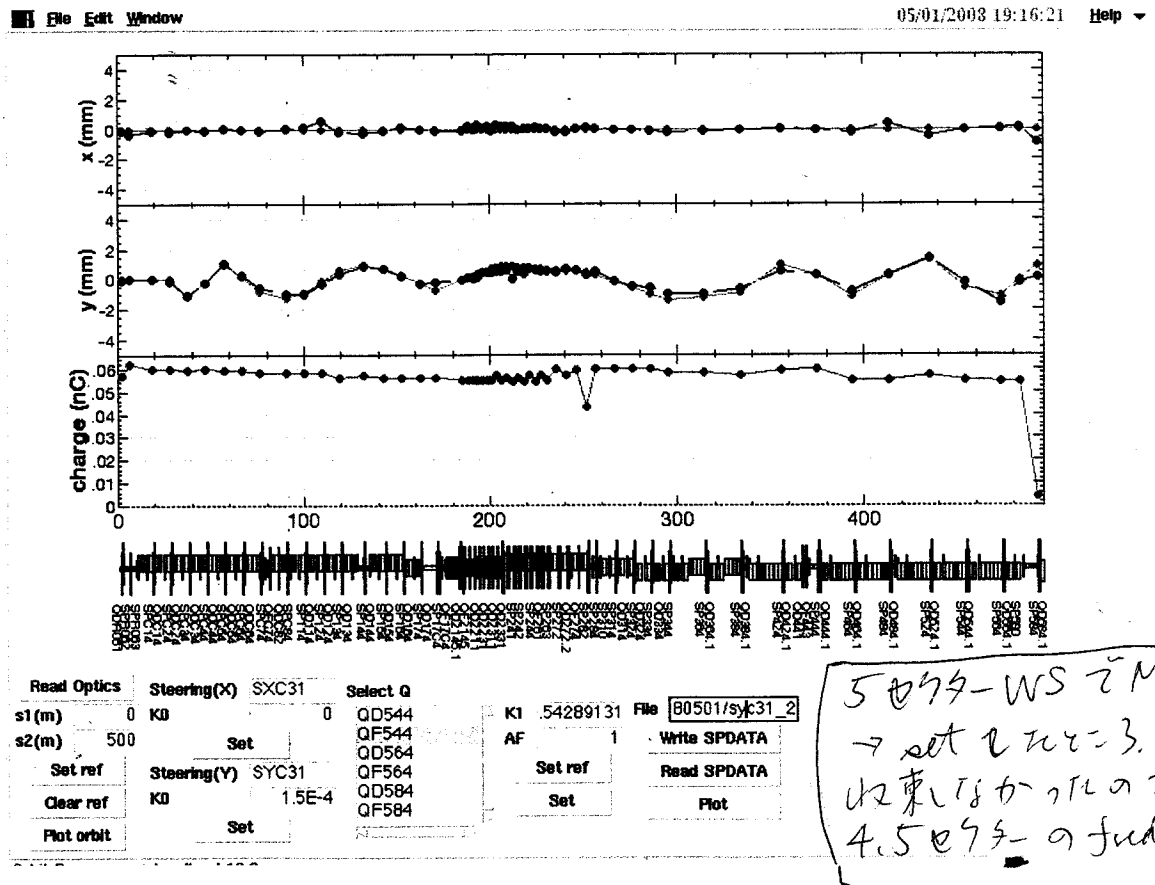
SX_C3_1



SY_C3_1



5セクター WS で Matching → set するところ. (P.106, 107) 収束しなかったので 4.5セクター の fudge factor を求めることに

Qa Fudge Factor

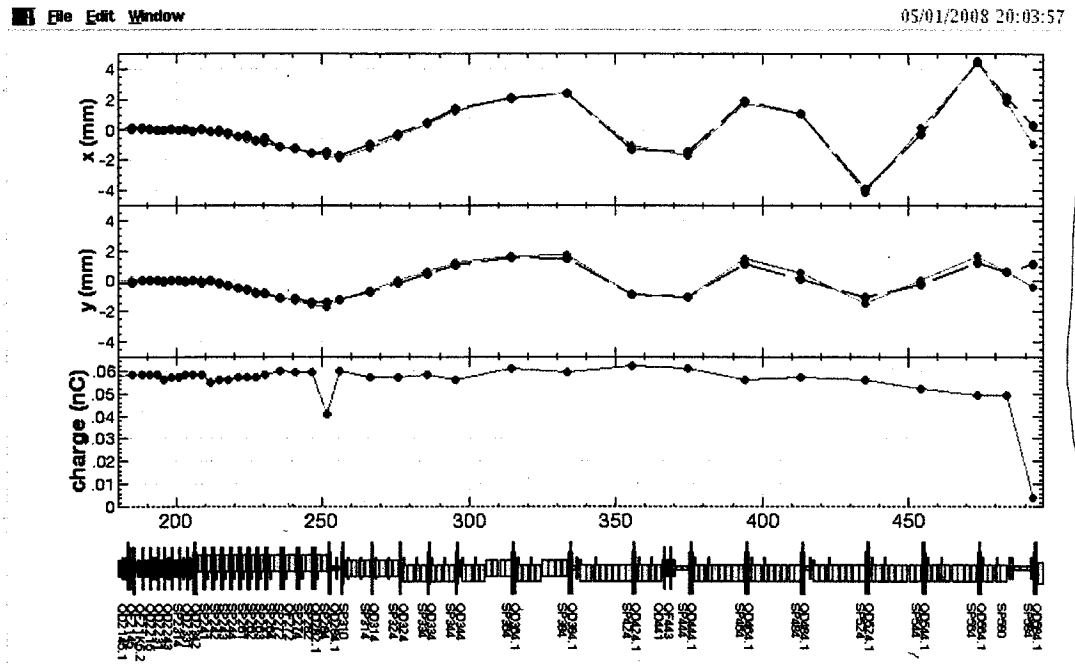
QF1484 : 0.95 × 1.02 = 0.969

QD484 : 1.03 , QD544 : 1.03, QF1544 : 1.02

を求めた

SX242

SY242



磁場 set ↓ ×Fudge

電流

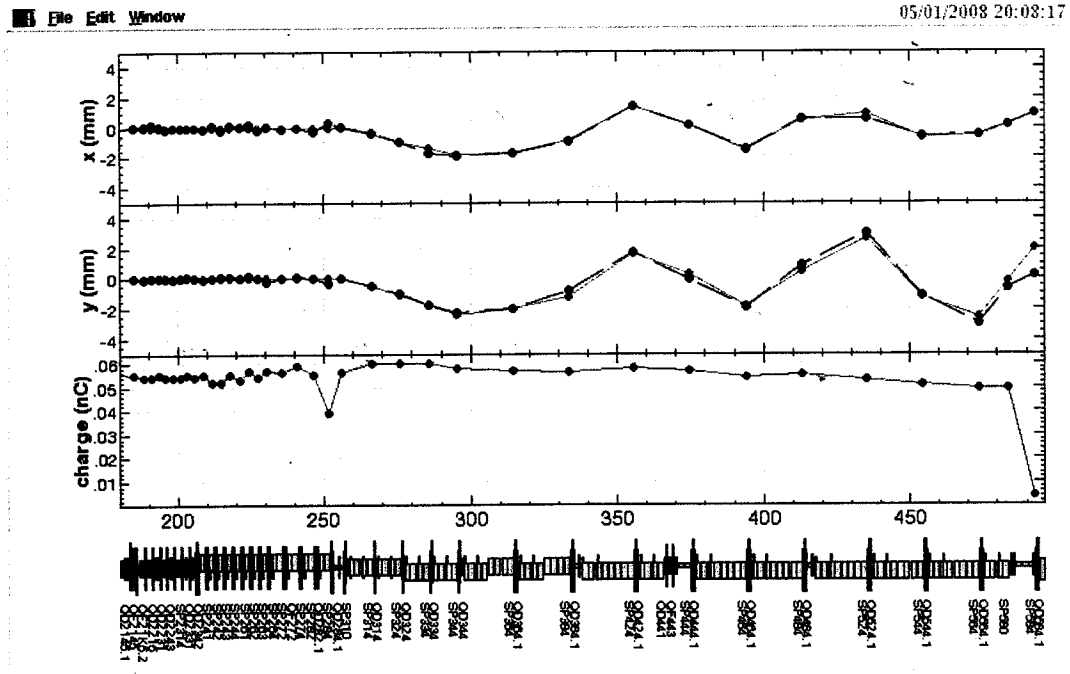
read ↓ ÷Fudge Factor

磁場

石川さんに Database に入れてもらった

SX311

SY311

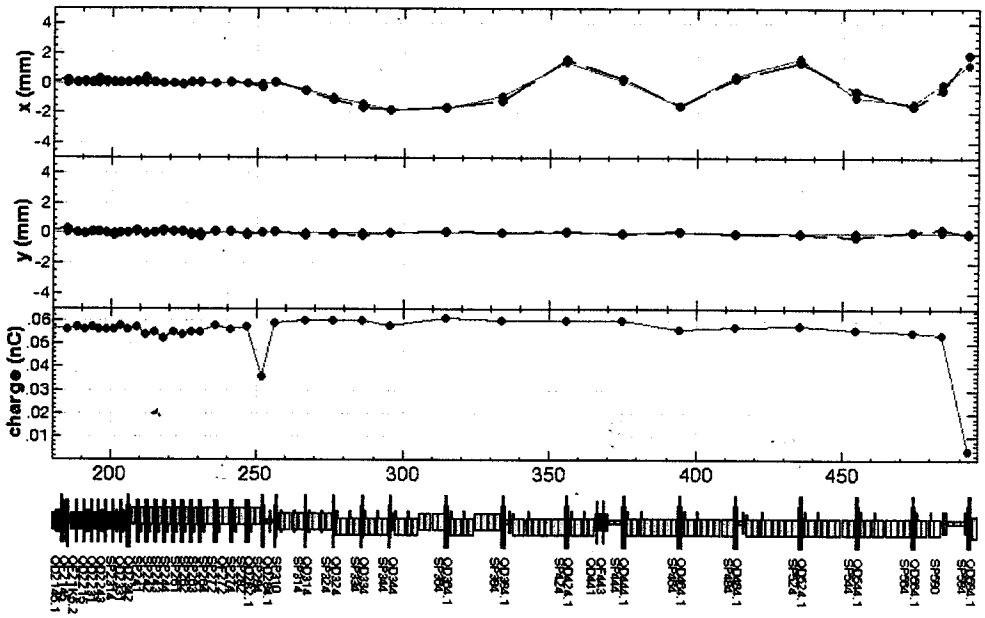


にした。

105

右のように Database を作って Fudge Factor を入れてやった後の測定と計算

File Edit Window 05/01/2008 20:53:49



Read Optics
s1(m) 180
s2(m) 500
Set ref
Clear ref
Plot orbit

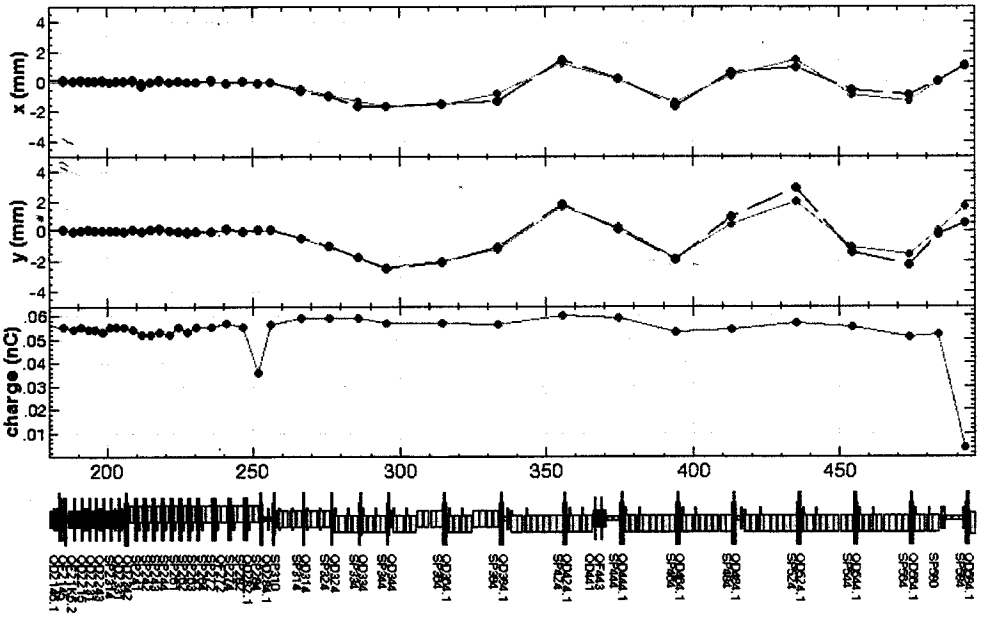
Steering(X) SX311
K0 5.5E-5
Set
Steering(Y) SY242
K0 0
Set

Select Q
QD484
QF484
QD524
QF524
QD544
QF544

K1 .99594352
AF 1
Set ref
Set

File temp.dat
Write SPDATA
Read SPDATA
Plot

File Edit Window 05/01/2008 21:09:02



Read Optics
s1(m) 180
s2(m) 500
Set ref
Clear ref
Plot orbit

Steering(X) SX311
K0 5E-5
Set
Steering(Y) SY311
K0 6.2E-5
Set

Select Q
QD464
QF464
QD484
QF484
QD524
QF524

K1 1.006028E
AF .99
Set ref
Set

File temp.dat
Write SPDATA
Read SPDATA
Plot

ステップ－Wire Scanner ptal

ステップ-29
Fudge Factorを1.023→1にして計算

今までWSのソフトで

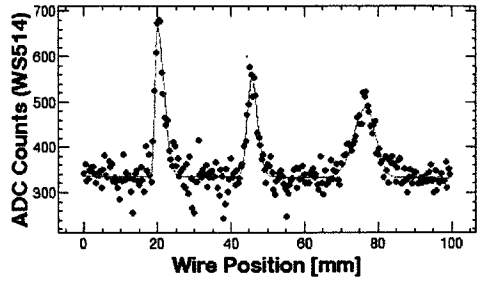
File Edit Control Window

05/01/2008 19:35:53 Help

Wire A

ChiSquare = 157813. Goodness = .48776

sigma1 = 1.20200 +/- .05648 sigma2 = 1.36681 +/- .09296 sigma3 = 2.93263 +/- .20480
asymm1 = .48353 +/- .06551 asymm2 = .17969 +/- .13789 asymm3 = -.12610 +/- .13681
xwire1 = 19.9025 +/- .12532 xwire2 = 45.9043 +/- .23071 xwire3 = 76.6546 +/- .49093
b1 = 334.164 +/- 13.8784 b2 = 222.202 +/- 12.9466 b3 = 154.681 +/- 8.99495
a1 = 336.803 +/- 3.55684 a2 = -.04496 +/- .06332

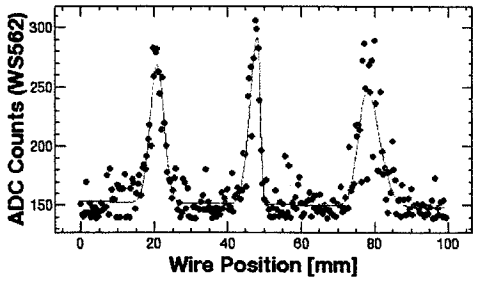


File: WS2008_5_1_19_28_55.datA File Pref ReFit 499.755859375 V 1684

Wire C

ChiSquare = 62561.4 Goodness = .48776

sigma1 = 1.89180 +/- .13507 sigma2 = 1.39097 +/- .09358 sigma3 = 2.90193 +/- .20740
asymm1 = -.01290 +/- .14359 asymm2 = -.50523 +/- .11794 asymm3 = .19248 +/- .13647
xwire1 = 20.7002 +/- .33261 xwire2 = 48.1582 +/- .20058 xwire3 = 77.8103 +/- .48456
b1 = 116.364 +/- 6.99137 b2 = 140.522 +/- 8.09096 b3 = 97.0963 +/- 5.69809
a1 = 153.562 +/- 2.36250 a2 = -.04984 +/- .04187

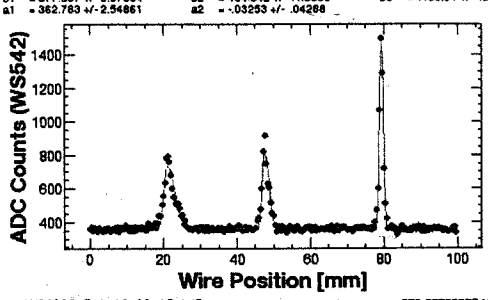


File: WS2008_5_1_19_33_0.datC File Pref ReFit 879.5703125 V 1449

Wire B

ChiSquare = 81096.2 Goodness = .48776

sigma1 = 1.47587 +/- .04123 sigma2 = .86329 +/- .02412 sigma3 = .50448 +/- .00789
asymm1 = .33651 +/- .05365 asymm2 = .32548 +/- .05389 asymm3 = -.01334 +/- .03287
xwire1 = 20.9865 +/- .09698 xwire2 = 47.4146 +/- .05693 xwire3 = 79.2810 +/- .02028
b1 = 377.557 +/- 8.97384 b2 = 464.542 +/- 11.8569 b3 = 1133.84 +/- 15.2641
a1 = 362.783 +/- 2.54861 a2 = -.03253 +/- .04288

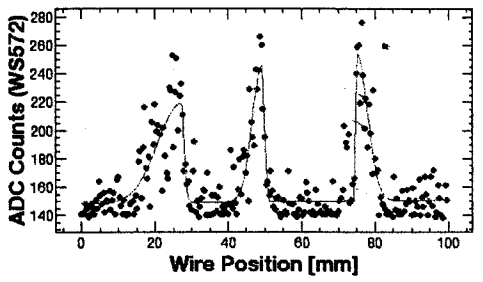


File: WS2008_5_1_19_30_18.datB File Pref ReFit 679.66796875 V 1520

Wire D

ChiSquare = 54804.1 Goodness = .48773

sigma1 = 3.62484 +/- .31833 sigma2 = 1.64055 +/- .14010 sigma3 = 1.60875 +/- .13125
asymm1 = -.77013 +/- .10414 asymm2 = -.61444 +/- .14170 asymm3 = .90000 +/- .07653
xwire1 = 27.0904 +/- .46281 xwire2 = 49.1731 +/- .28542 xwire3 = 74.9675 +/- .15215
b1 = 70.0085 +/- 4.79384 b2 = 96.1841 +/- 5.99081 b3 = 103.984 +/- 7.13273
a1 = 146.456 +/- 2.57741 a2 = .02696 +/- .04112

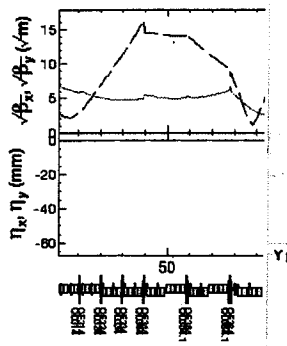


File: WS2008_5_1_19_34_22.datD File Pref ReFit 879.5703125 V 1422

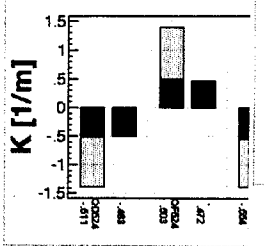
File Edit Window

Wire Scan Optics Calculate Matching

Matching



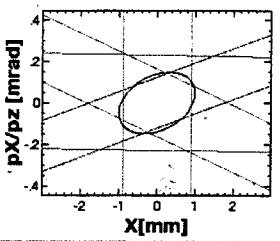
Strength of Free Qmag (QX*)



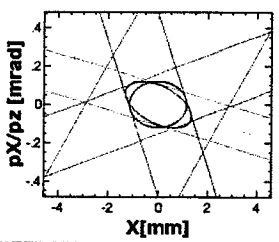
File Edit Window

Wire Scan Optics Calculate Matching

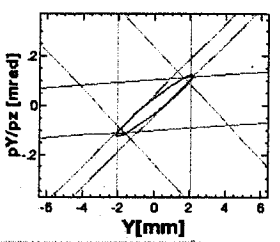
X phase space at Wire A



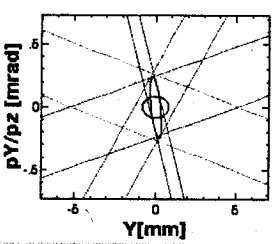
X phase space at Matching Point



Y phase space at Wire A



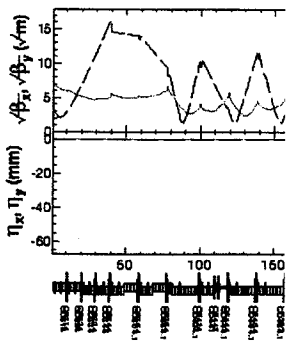
Y phase space at Matching Point



Results of Measurement

β_x @AC574+1 [m] :	12.558	β_y @AC574+	
α_x @AC574+1 :	.582	α_y @AC574+	
ε_x [m] :	1.3824E-7	ε_y [m] :	
$\gamma\varepsilon_x$ [π.mm.mrad] :	676.303	$\gamma\varepsilon_y$ [π.mm.m	
Bmag x :	1.166	Bmag y :	
εBmag x :	1.6118E-7	εBmag y :	
γεBmag x :	788.557	γεBmag y :	

Optics Plot



Wire Selection

3-wire:ABC 3-wire:ABD 3-wire:A(

◆ 4-wire:ABCD

NonLinearFit Err(meas), nσ n: 0

"Calculate Optics" Save All P

Orbit values were SAVED to /data1/KEKB/Wire/LINAC/sector5/PF/data/Ovalue/oname_2008_5_1_19_23_57.dat0

↑ set した。

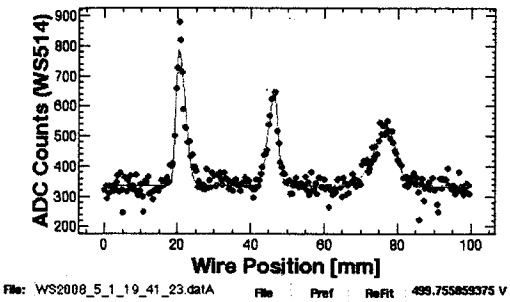
107

File Edit Control Window 05/01/2008 19:16:17 Help

Wire A

ChiSquare = 163921. Goodness = .48776

sigma1 = 1.24652 +/- .04768	sigma2 = 1.34387 +/- .07266	sigma3 = 3.08399 +/- .18441
asymm1 = .39618 +/- .07135	asymm2 = -.19870 +/- .11004	asymm3 = -.18091 +/- .11580
xwire1 = 20.2186 +/- .10886	xwire2 = 46.3044 +/- .18119	xwire3 = 77.0346 +/- .43692
b1 = 450.650 +/- 14.6933	b2 = 303.391 +/- 14.0654	b3 = 190.769 +/- 9.48967
a1 = 338.312 +/- 3.85273	a2 = -.05399 +/- .06874	

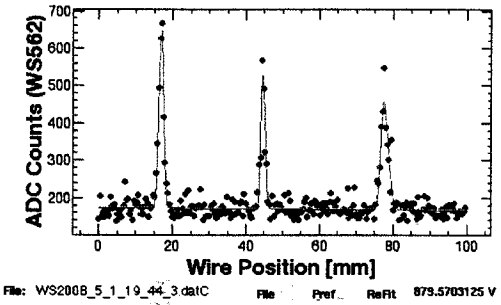


File: WS2008_5_1_19_41_23.datA File Pref ReFit 499.755859375 V 1685

Wire C

ChiSquare = 135453. Goodness = .48776

sigma1 = .65002 +/- .02748	sigma2 = .54660 +/- .03313	sigma3 = 1.01573 +/- .05695
asymm1 = -.14371 +/- .08572	asymm2 = .11469 +/- .12608	asymm3 = .18332 +/- .11309
xwire1 = 17.0353 +/- .06837	xwire2 = 44.5223 +/- .06486	xwire3 = 77.4043 +/- .14067
b1 = 478.816 +/- 17.3810	b2 = 360.058 +/- 18.8425	b3 = 290.503 +/- 13.9210
a1 = 174.279 +/- 3.17725	a2 = -.07499 +/- .05525	

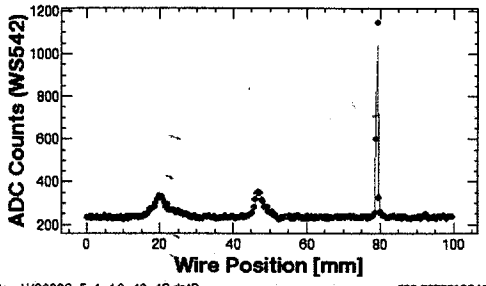


File: WS2008_5_1_19_44_3.datC File Pref ReFit 879.5703125 V 1450

Wire B

ChiSquare = 8294.33 Goodness = .48776

sigma1 = 2.35467 +/- .07854	sigma2 = 1.27384 +/- .04153	sigma3 = .23966 +/- .00468
asymm1 = .29439 +/- .06363	asymm2 = .42000 +/- .06176	asymm3 = -.19302 +/- .06450
xwire1 = 19.8254 +/- .16346	xwire2 = 46.3233 +/- .09834	xwire3 = 79.1858 +/- .02636
b1 = 81.9603 +/- 2.29461	b2 = 109.711 +/- 3.06978	b3 = 912.421 +/- 10.2529
a1 = 234.748 +/- .87003	a2 = .01567 +/- .01413	

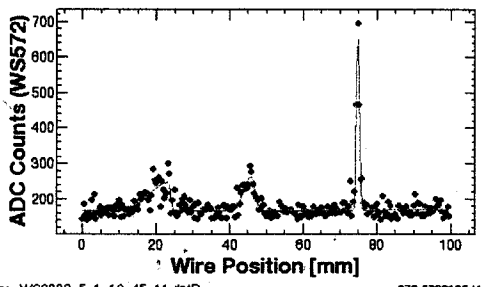


File: WS2008_5_1_19_42_48.datB File Pref ReFit 599.70703125 V 1521

Wire D

ChiSquare = 93139.2 Goodness = .48776

sigma1 = 2.77634 +/- .30571	sigma2 = 1.49508 +/- .17461	sigma3 = .39687 +/- .01771
asymm1 = -.60000 +/- .13809	asymm2 = -.32055 +/- .22731	asymm3 = .20848 +/- .11280
xwire1 = 23.2928 +/- .46913	xwire2 = 45.7976 +/- .41625	xwire3 = 74.7213 +/- .05332
b1 = 79.5733 +/- 7.10040	b2 = 95.4442 +/- 9.51385	b3 = 516.900 +/- 20.2869
a1 = 166.094 +/- 3.14988	a2 = .02779 +/- .04997	

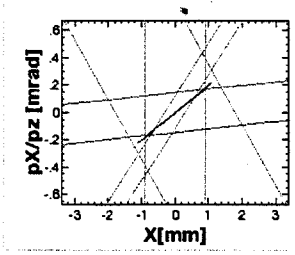


File: WS2008_5_1_19_45_11.datD File Pref ReFit 879.5703125 V 1423

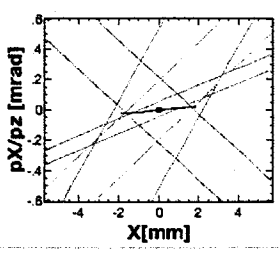
File Edit Window 05/01/2008 19:50:40 Help

Wire Scan | Optics Calculate | Matching

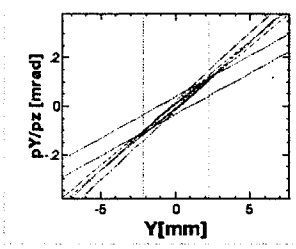
X phase space at Wire A



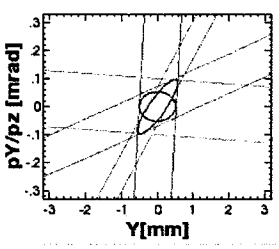
X phase space at Matching Point



Y phase space at Wire A



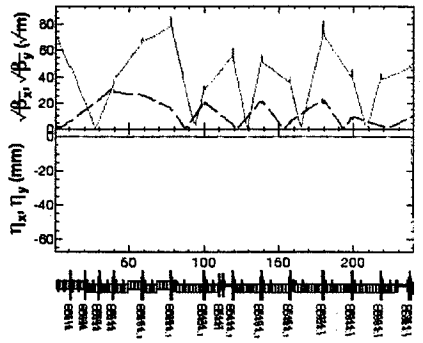
Y phase space at Matching Point



Results of Measurement

β_x @AC574+1 [m] :	1747.473	β_y @AC574+1 [m] :	11.824
α_x @AC574+1 :	-22.459	α_y @AC574+1 :	-1.782
ε_x [m] :	2.0365E-9	ε_y [m] :	2.6246E-8
$\gamma\varepsilon_x$ [π.mm.mrad] :	9.973	$\gamma\varepsilon_y$ [π.mm.mrad] :	128.405
Bmag x :	93.758	Bmag y :	2.322
εBmag x :	1.9113E-7	εBmag y :	6.0933E-8
γεBmag x :	935.063	γεBmag y :	298.107

Optics Plot



Wire Selection

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

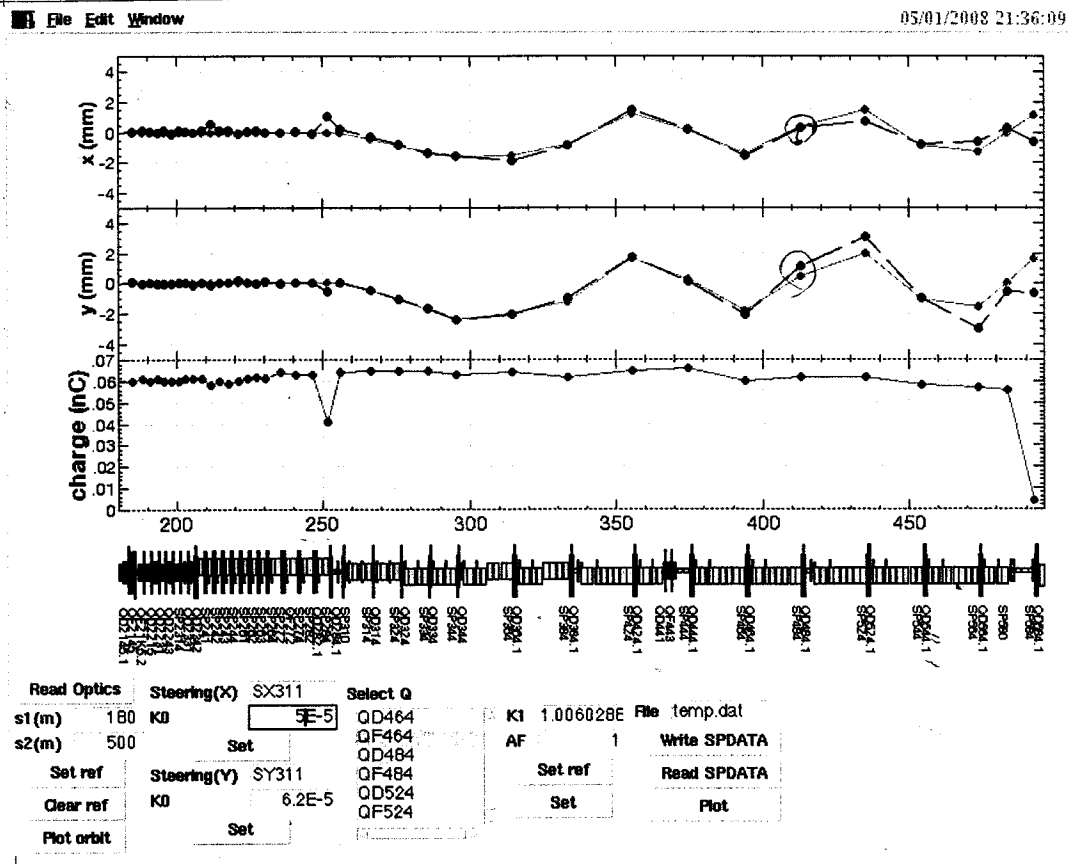
◆ 4-wire:ABCD

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

"Calculate Optics" Save All Parameters

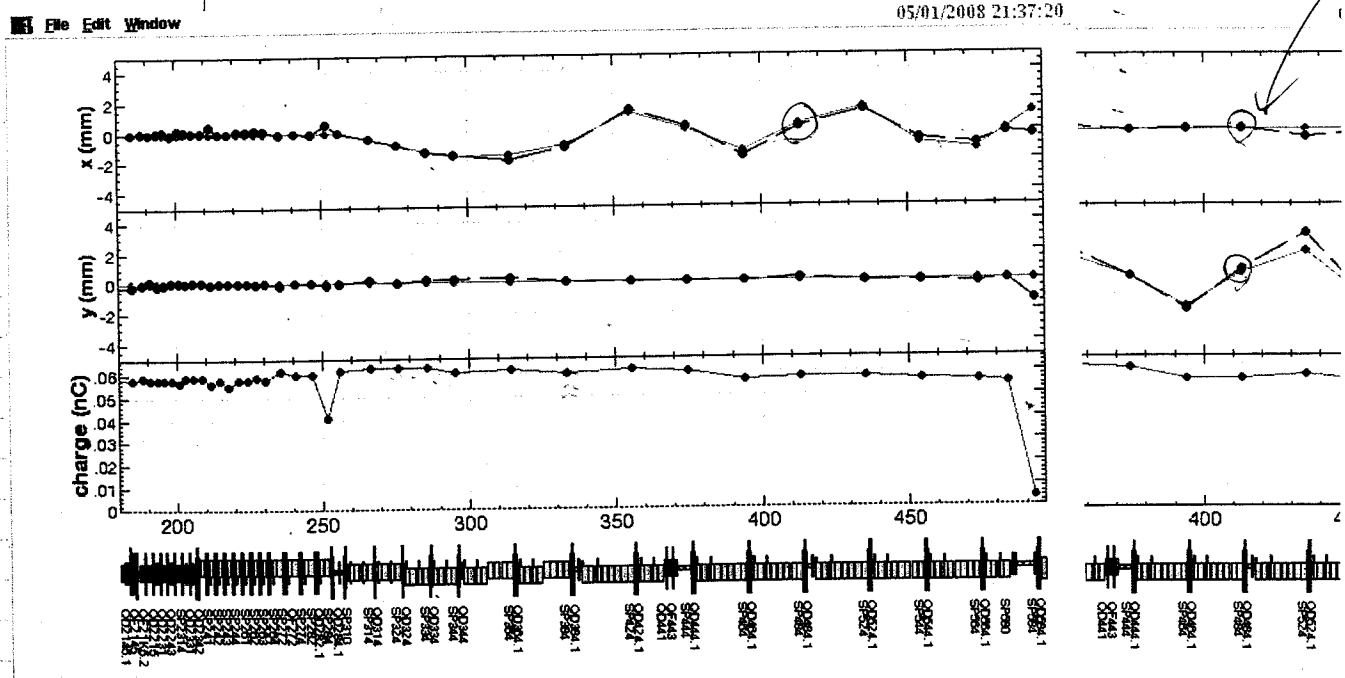
BMAG 1に近づけ、完成。

Data Base の FF を一旦 1 にもどす.



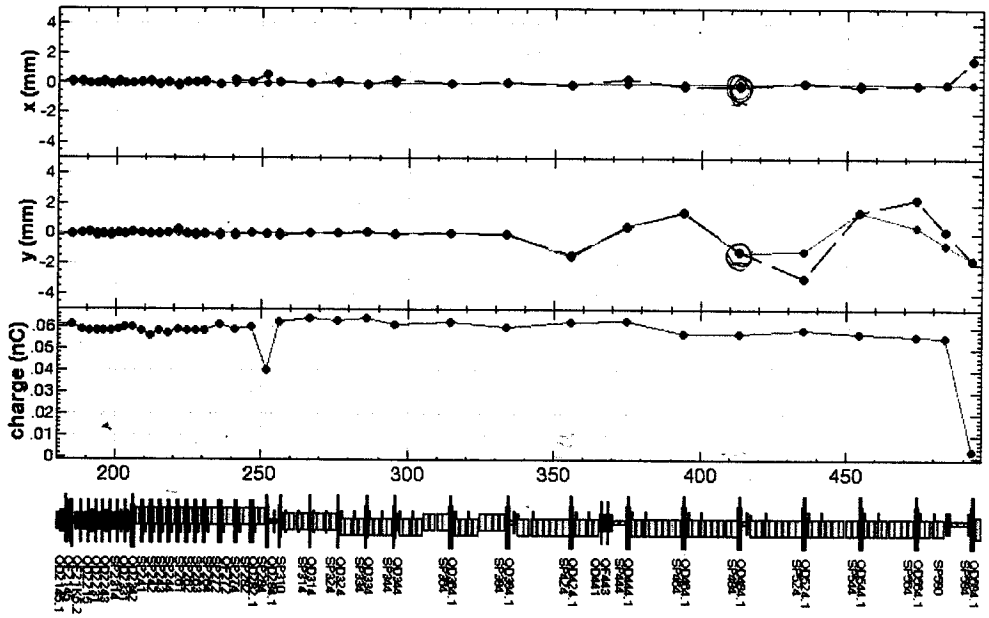
x のみ軌道を出した時と response が違う

XY coupling



13Y384

File Edit Window 05/01/2008 21:53:17

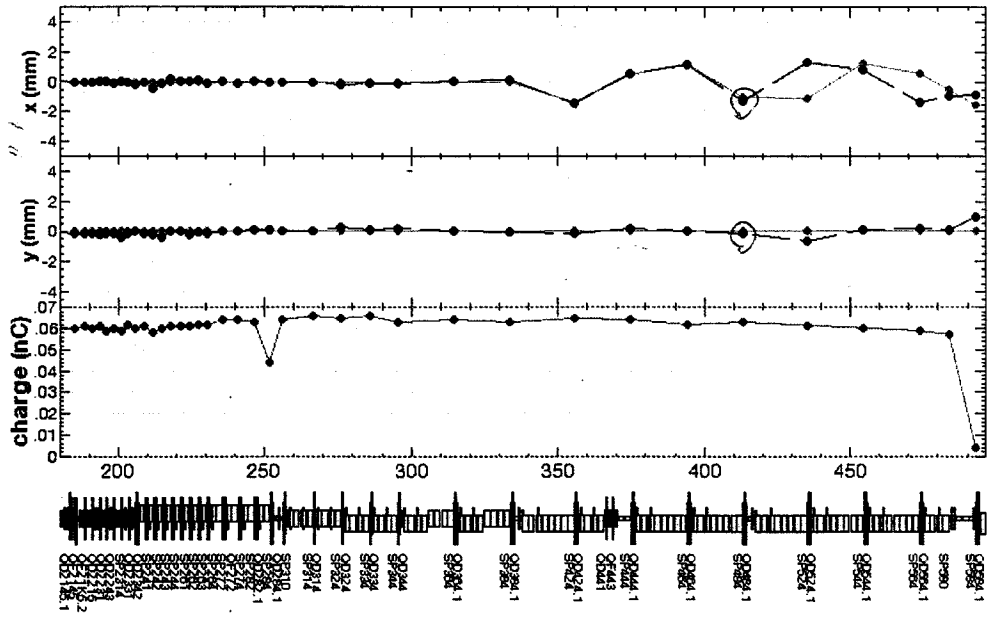


Read Optics | Steering(X) SX311 | Select Q
s1(m) 180 | K0 0 | QD464
s2(m) 500 | Set | QF464
Set ref | Steering(Y) BY384 | QD484
Clear ref | K0 6E-5 | QF484
Plot orbit | Set | QD524
QF524

K1 1.006028E File temp.dat
AF 1 Write SPDATA
Set ref Read SPDATA
Set Plot

BX384

File Edit Window 05/01/2008 21:56:31

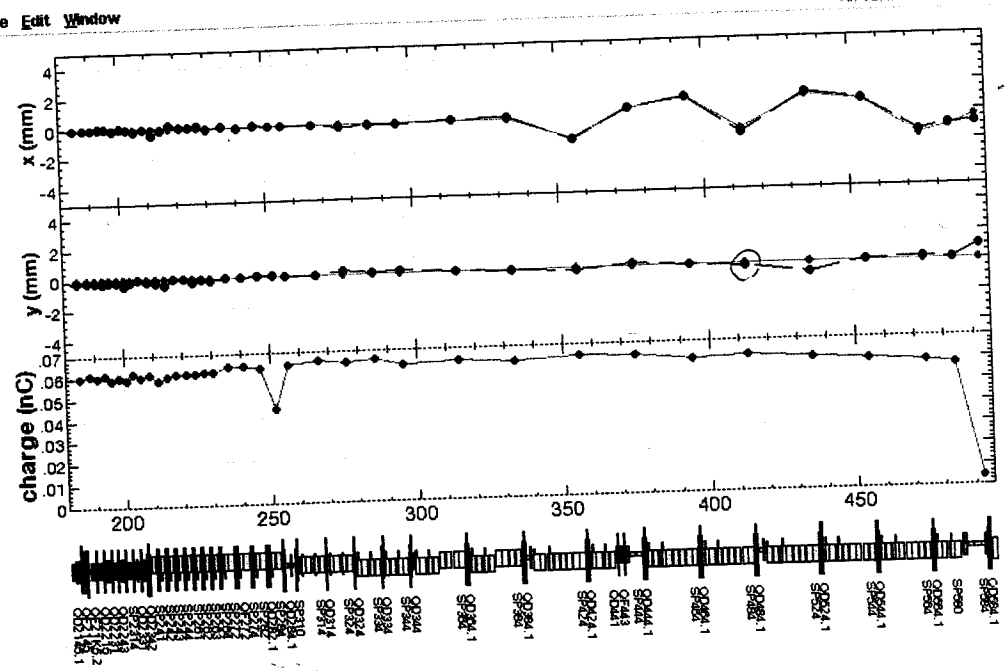


Read Optics | Steering(X) BX384 | Select Q
s1(m) 180 | K0 7E-5 | QD464
s2(m) 500 | Set | QF464
Set ref | Steering(Y) BY384 | QD484
Clear ref | K0 0 | QF484
Plot orbit | Set | QD524
QF524

K1 1.006028E File temp.dat
AF 1 Write SPDATA
Set ref Read SPDATA
Set Plot

05/01/2008 21:59:20

File Edit Window



Read Optics | Steering(X) BX384 | Select Q
s1(m) 180 | K0 7E-5 | Set | QD464 | QF464 | QD484 | QF484 | QD524 | QF524
s2(m) 500
Set ref | Steering(Y) BY384 | K0 0 | Set
Clear ref
Plot orbit

K1 1.037708E | File temp.dat
AF .93 | Write SPDATA
Set ref | Read SPDATA
Set | Plot

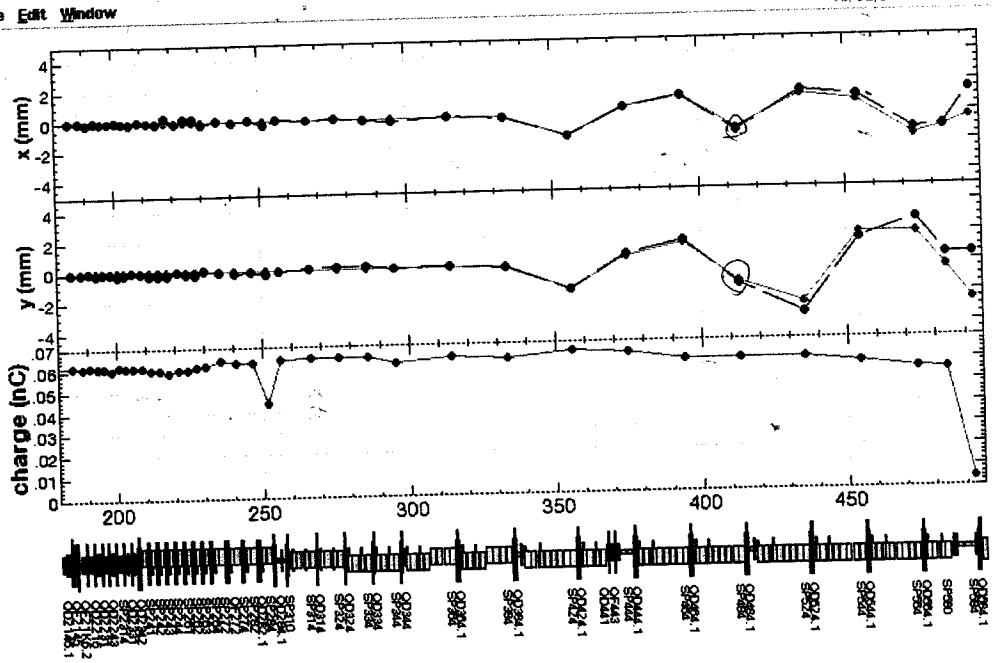
BX384

QF484

FF 93

05/01/2008 22:00:47

File Edit Window



Read Optics | Steering(X) BX384 | Select Q
s1(m) 180 | K0 7E-5 | Set | QD464 | QF464 | QD484 | QF484 | QD524 | QF524
s2(m) 500
Set ref | Steering(Y) BY384 | K0 8E-5 | Set
Clear ref
Plot orbit

K1 1.037708E | File temp.dat
AF .93 | Write SPDATA
Set ref | Read SPDATA
Set | Plot

BX384

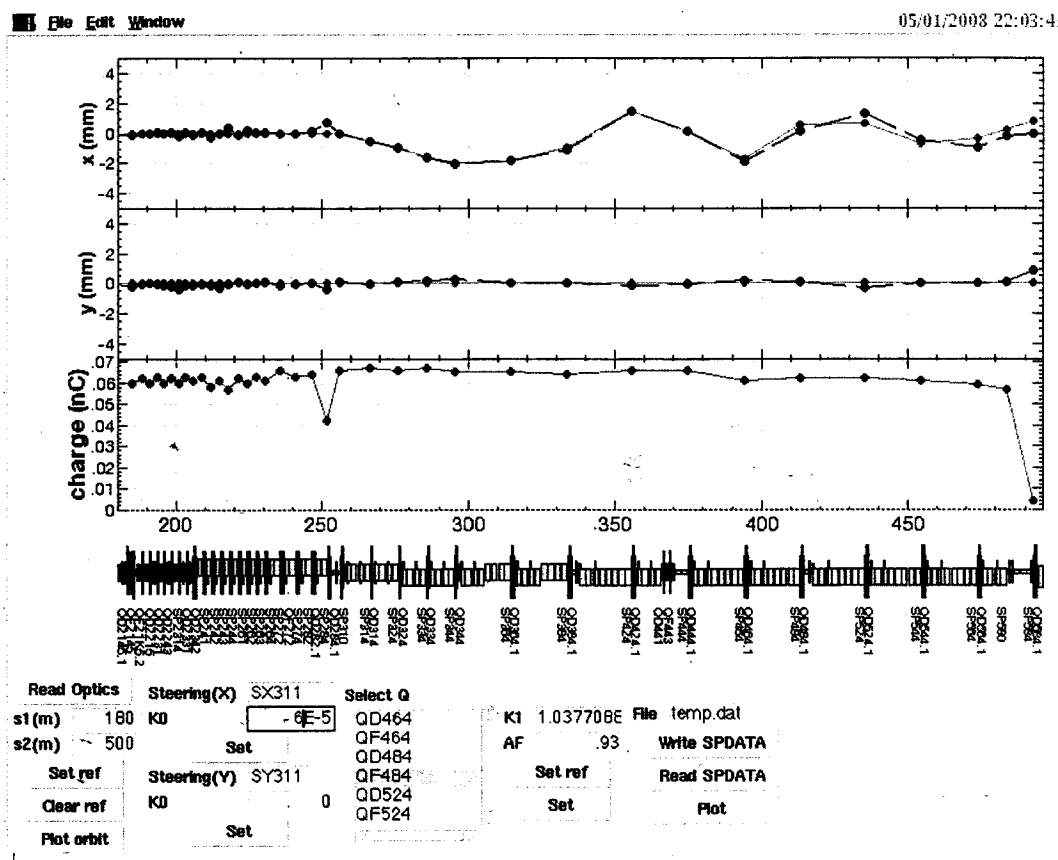
BY384

FF. 93

111

SX311

QF484
・93



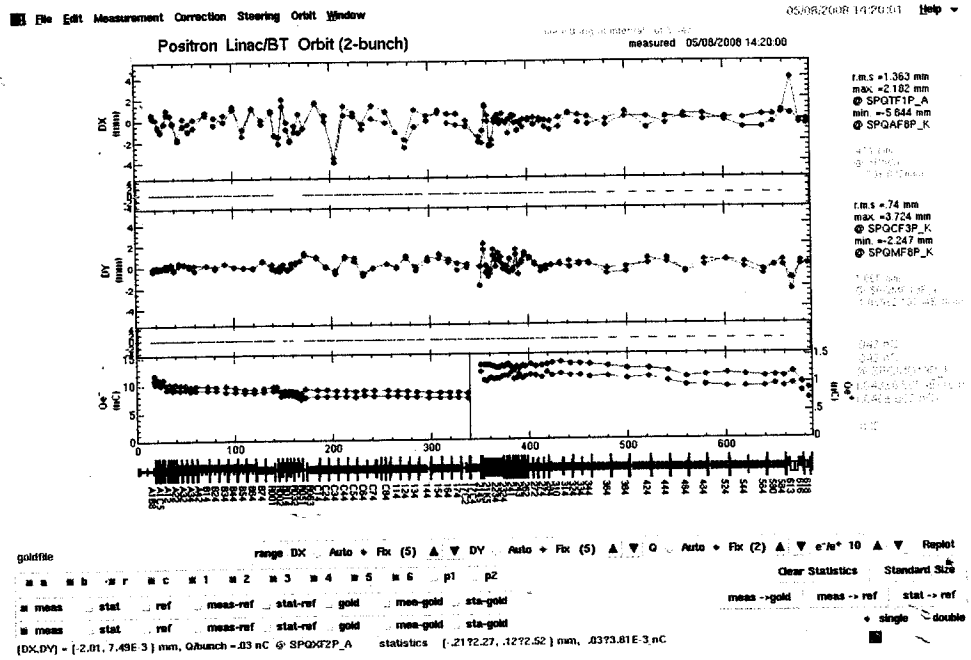
- QF484 に coupling があるか.
  QD484

  +Yと-Yで ちがう.
  +Y で coupling 発生
  -Y で 〃 なし.

- QF ~~AF~~ 484 の AF を 0.93 にすると. まあまあ合う?
  もう少し微調整が必要.

- 次回. energy を一定にして.
  Q の Fudge Factor を求める.
- 問題の QF484 は. 0 にして行なう

'08.5.8 e^+/e^- 同時入射 Study



今の運転パラメーター

'06.3.8. data 4135.all を load
target 前 1nC (e^-) 後 (e^+) optics

QD17-C4/5/QF

17.499 / 16.762 (運転値)
(0)
↓
7.862 / 8.599 (data 4135.all より)
~~/~~ /(-1)[A] 15.762
/(-2) 14.762
/(-3) 13.762
/(-4) 12.762
/(-5) 11.762
/(-6) 10.762
/(-7) 9.762
/(-8) 8.762

Target 後
1.38 nC
↓ SP-2I-K5
1.00 nC
~~1.40~~ nC ± 2/100
~~1.38~~
1.38 nC
1.35 nC
1.29 nC
1.19 nC
1.12 nC
1.07 nC
1.00 nC