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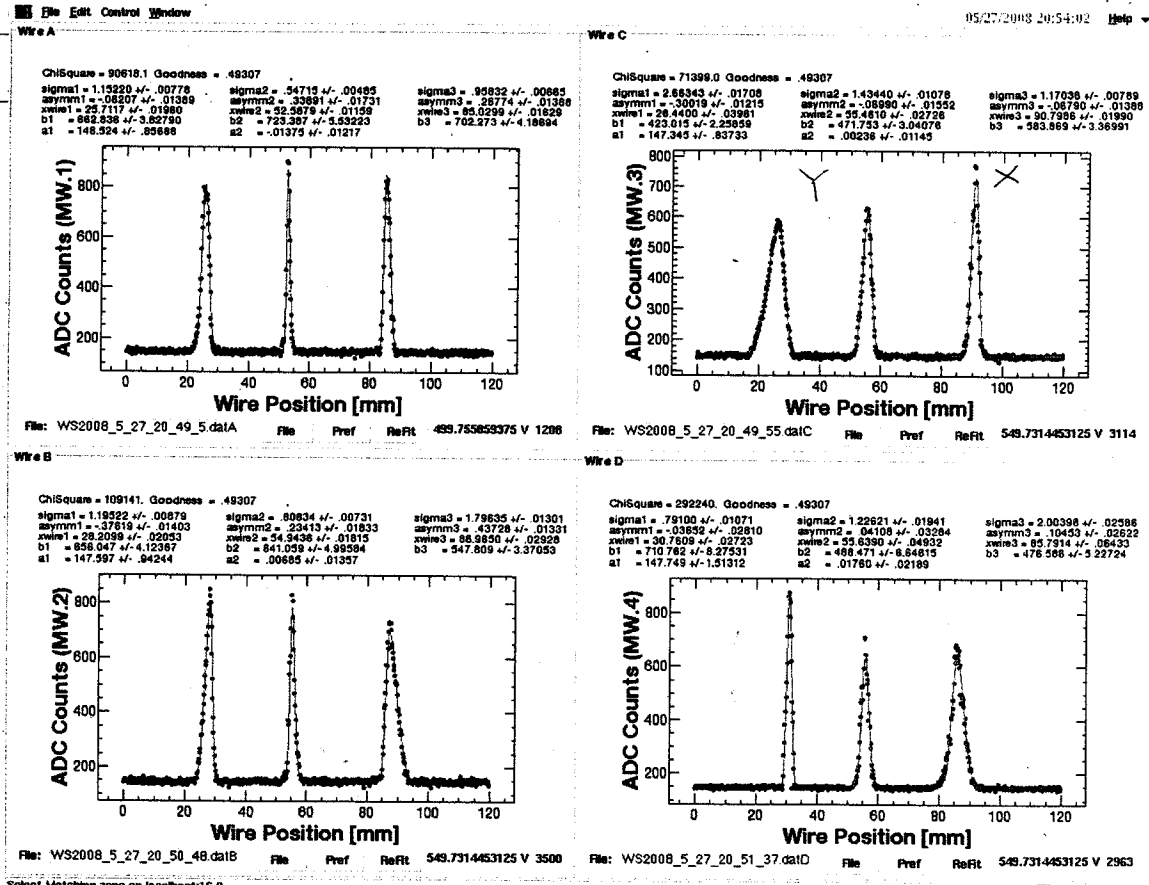
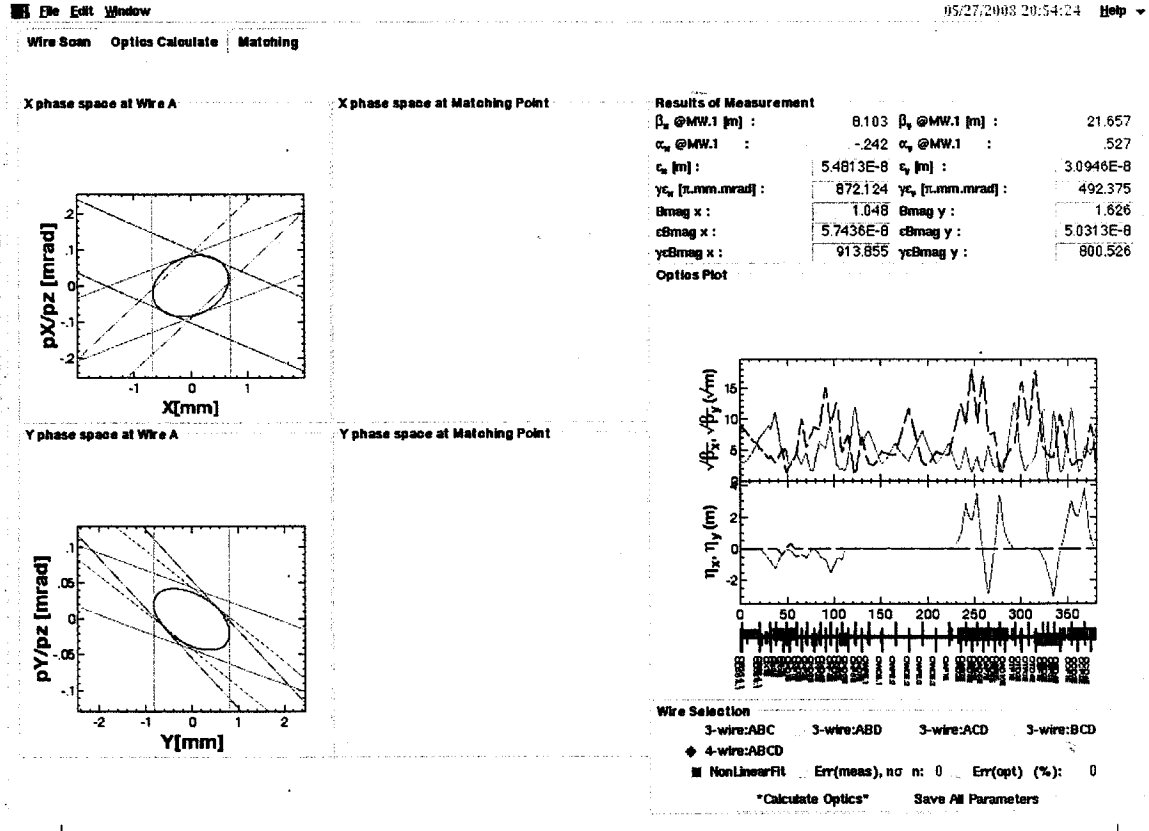
再々測定





BMAGは、これ以上変わらない。

Verticalに少し悪い。

KEKB e⁻ 入射をした。問題なし。

2008/5/28

KEKB リング - d への移行の裏で Study (LER)

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菊地. 大西 ~~鈴木~~

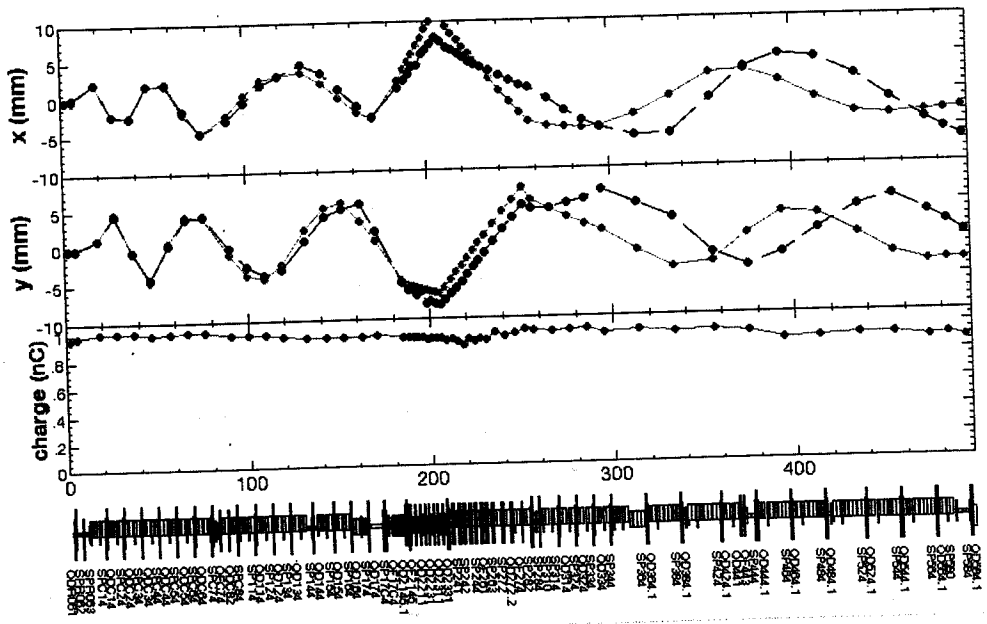
メニュー

8GeV で fudge factor 測定

05/28/2008 22:53:08 Help

File Edit Window

Orbit AF^-1 ΔK1 ΔB'



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

Steering(X) SXC11
K0 -3.025482
Set Clear

Steering(Y) SYC11
K0 -1.676834
Set Clear

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

K1 0
AF 1
Set ref
Set

average
x ◆ y xy
Read SPDATA
Plot
Set ref

Add
EPS .03
Calc
Show Fudge
Set Fudge
Clear Fudge

Open file is /mnt/nadata1a/users/onishi/cvs-work/LCG/SAD/Library/single-kick/syc11_2.dat

※ QD284 Fudge を 0.99 → 0.98 へ変更した

B'=49.12[T/m]

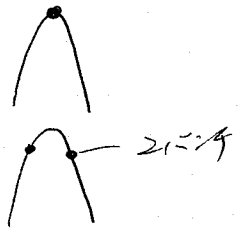
KEKB を dummy mode で測定

QD284 I = 15.106 [A]

B' 49.12~~5~~26 [T/m]

2.5 GeV SLED Timing

8.0 GeV



のため、エネルギーがずれていると思われる。

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5/29 Overall の Timing (1BL、Cセクター以降)を PFに set して、KEKB (Scott) を測定してみる
f.f を元の 0.99 にもどした。
QD084 { 14.891 [A]
49.123 [T/m]

KEKB e⁻ に save.

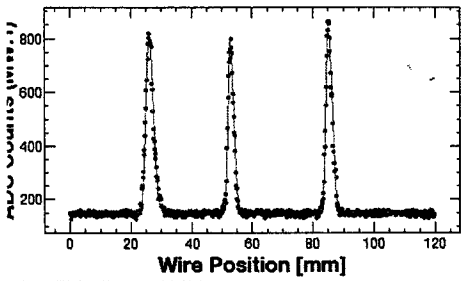
15:10 ワイヤースキャナー BT e⁻ で Matching 再トライ

大西敏

Edit Control Window 05/29/2008 15:09:36 Help

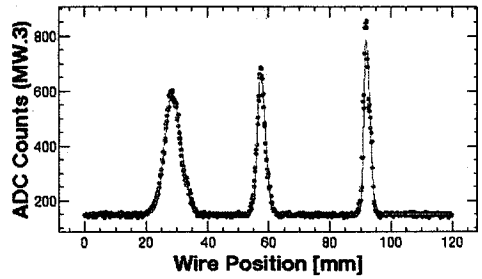
Wire C

quare = 110535. Goodness = .49307
a1 = 1.22534 +/- .00912 sigma2 = .91643 +/- .00780 sigma3 = 1.00032 +/- .00755
nm1 = .15736 +/- .01513 asymm2 = .24050 +/- .01721 asymm3 = .23923 +/- .01516
1 = 25.9218 +/- .02270 xwire2 = 52.8836 +/- .01932 xwire3 = 84.3370 +/- .01880
= 644.907 +/- 4.10192 b2 = 844.627 +/- 4.72329 b3 = 998.932 +/- 4.52751
= 148.656 +/- .95209 a2 = -.00842 +/- .01345



WS2008_5_29_15_6_21.datA File Pref ReRt 499.755859375 V 78

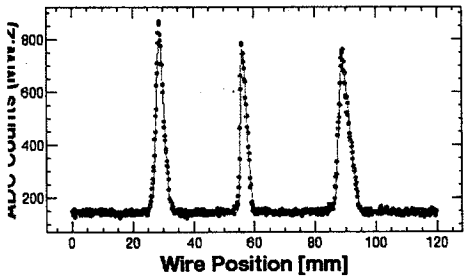
ChiSquare = 129734. Goodness = .49307
sigma1 = 2.62739 +/- .02181 sigma2 = 1.31456 +/- .01283 sigma3 = 1.00692 +/- .00896
asymm1 = .10309 +/- .01661 asymm2 = .12536 +/- .02009 asymm3 = .32619 +/- .01738
xwire1 = 28.3270 +/- .05342 xwire2 = 57.3595 +/- .03234 xwire3 = 91.6419 +/- .02143
b1 = 438.005 +/- 3.06164 b2 = 510.269 +/- 4.27912 b3 = 641.847 +/- 4.89391
a1 = 149.562 +/- 1.09521 a2 = -.01434 +/- .01509



File: WS2008_5_29_15_7_58.datC File Pref ReRt 549.7314453125 V 3121

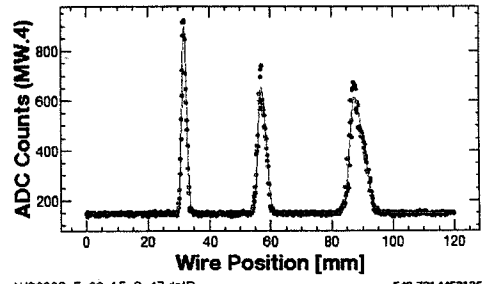
Wire D

quare = 122249. Goodness = .49307
a1 = 1.26635 +/- .00958 sigma2 = 1.01643 +/- .00909 sigma3 = 1.74648 +/- .01328
nm1 = .13427 +/- .01521 asymm2 = .48063 +/- .01625 asymm3 = .35036 +/- .01455
1 = 28.8898 +/- .02397 xwire2 = 55.9527 +/- .02026 xwire3 = 86.8324 +/- .03112
= 860.530 +/- 4.20920 b2 = 613.782 +/- 4.71473 b3 = 560.325 +/- 3.61888
= 148.292 +/- .99840 a2 = -.00349 +/- .01437



VS2008_5_29_15_7_10.datB File Pref ReRt 549.7314453125 V 3504

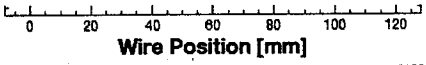
ChiSquare = 192647. Goodness = .49307
sigma1 = .76152 +/- .00807 sigma2 = 1.28433 +/- .01549 sigma3 = 2.19659 +/- .02250
asymm1 = .11775 +/- .02185 asymm2 = .16947 +/- .02460 asymm3 = .36258 +/- .01919
xwire1 = 31.6397 +/- .02038 xwire2 = 56.8327 +/- .03689 xwire3 = 87.1909 +/- .05161
b1 = 751.508 +/- 6.84643 b2 = 508.632 +/- 5.27348 b3 = 469.133 +/- 4.05929
a1 = 147.372 +/- 1.22615 a2 = -3.5E-4 +/- .01795



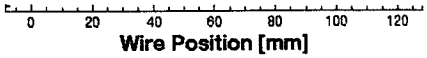
File: WS2008_5_29_15_8_47.datD File Pref ReRt 549.7314453125 V 2967

atching zone on localhost:10.0

Save Q-Mag to File



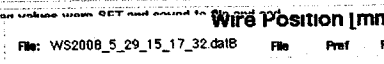
File: WS2008_5_29_15_13_22.datB File Pref ReRt 549.7314453125 V 3505



File: WS2008_5_29_15_14_11.datD File Pref ReRt 549.7314453125 V 2968

Select Matching zone on localhost:10.0

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



File: WS2008_5_29_15_17_32.datB File Pref ReRt 549.7314453125 V 3506

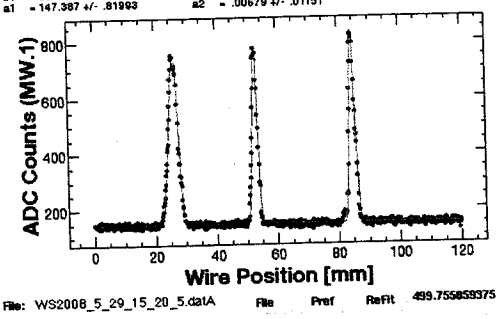
File: WS2008_5_29_15_18_22.datD File Pref ReRt 549.7314453125 V 2969

Matching 後　BMAG = 1 になる

File Edit Control Window

Wire A

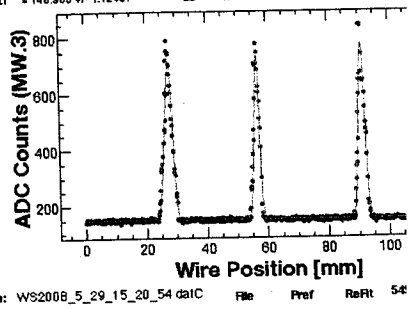
ChiSquare = 79978.7 Goodness = .49307
sigma1 = 1.46455 +/- .00909
asymm1 = -.04740 +/- .01270
xwire1 = 26.0107 +/- .02278
b1 = 604.478 +/- 3.19608
a1 = 147.387 +/- .81993
sigma2 = .85503 +/- .00648
asymm2 = .00429 +/- .01560
xwire2 = 52.8203 +/- .01655
b2 = 638.672 +/- 4.15918
a2 = .00679 +/- .01151
sigma3 = .92186 +/- .00625
asymm3 = .21392 +/- .01374
xwire3 = 84.2681 +/- .01551
b3 = 688.424 +/- 4.01018



File: WS2008_5_29_15_20_5.datA File Pref ReRt 499.755859375 V 81

Wire C

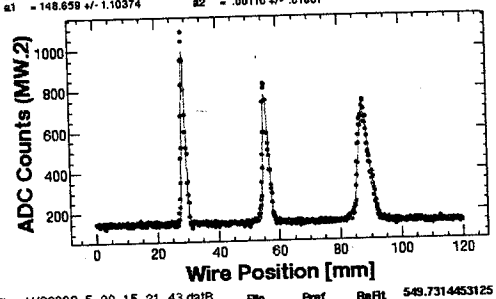
ChiSquare = 154312. Goodness = .49307
sigma1 = 1.29339 +/- .01253
asymm1 = -.05747 +/- .01989
xwire1 = 27.4281 +/- .03151
b1 = 570.119 +/- 4.71728
a1 = 148.983 +/- 1.12497
sigma2 = .86906 +/- .00991
asymm2 = -.08924 +/- .02315
xwire2 = 56.5841 +/- .02521
b2 = 589.641 +/- 5.66526
a2 = -.00800 +/- .01600



File: WS2008_5_29_15_20_54.datC File Pref ReRt

Wire B

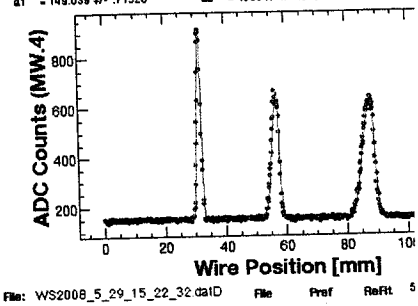
ChiSquare = 157404. Goodness = .49307
sigma1 = .85490 +/- .00597
asymm1 = .15832 +/- .01875
xwire1 = 28.6556 +/- .01504
b1 = 849.986 +/- 6.67022
a1 = 148.659 +/- 1.10374
sigma2 = .89504 +/- .00948
asymm2 = .35331 +/- .02064
xwire2 = 55.2913 +/- .02262
b2 = 624.788 +/- 5.70335
a2 = .00110 +/- .01607
sigma3 = 1.78089 +/- .01589
asymm3 = .31185 +/- .01712
xwire3 = 87.1406 +/- .03734
b3 = 542.690 +/- 4.08544



File: WS2008_5_29_15_21_43.datB File Pref ReRt 549.7314453125 V 3507

Wire D

ChiSquare = 66102.5 Goodness = .49307
sigma1 = .85882 +/- .00421
asymm1 = -.08791 +/- .01324
xwire1 = 31.4041 +/- .01068
b1 = 783.558 +/- 4.30965
a1 = 149.039 +/- .71526
sigma2 = 1.18052 +/- .00860
asymm2 = -.36085 +/- .01411
xwire2 = 58.9821 +/- .02040
b2 = 514.025 +/- 3.22100
a2 = .00347 +/- .01036



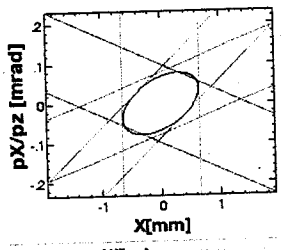
File: WS2008_5_29_15_22_32.datD File Pref ReRt

Select Matching zone on localhost:10.0

File Edit Window

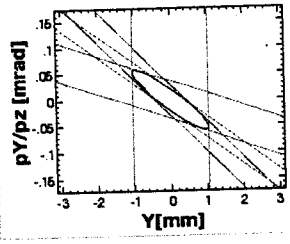
Wire Scan Optics Calculate Matching

X phase space at Wire A



X phase space at Matching Point

Y phase space at Wire A

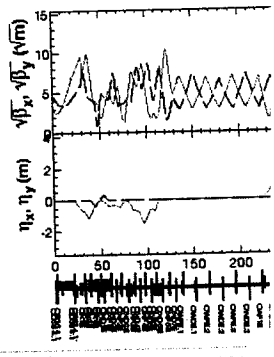


Y phase space at Matching Point

Results of Measurement

β_x @MW.1 [m] :	9.477	β_y @MW.1 [
α_x @MW.1 :	-.551	α_y @MW.1
ε_x [m] :	4.3401E-8	ε_y [m] :
$\gamma\varepsilon_x$ [π.mm.mrad] :	690.542	$\gamma\varepsilon_y$ [π.mm.r
Bmag x :	1.000	Bmag y :
εBmag x :	4.3411E-8	εBmag y :
γεBmag x :	690.712	γεBmag y :

Optics Plot



Wire Selection

3-wire:ABC 3-wire:ABD 3-wir

◆ 4-wire:ABCD

NonLinearFit Err(meas), nσ n: 0

"Calculate Optics" Save

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SXC11 −2.49A

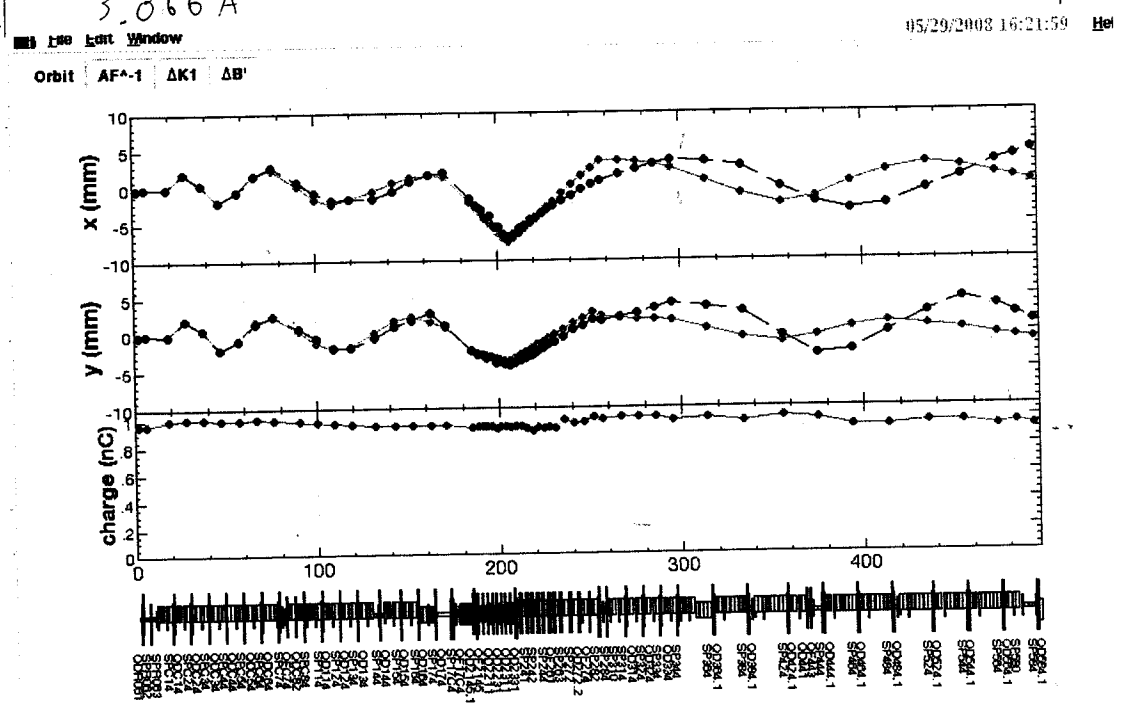
SYC11 −2A +2A　　KEKB Scan で f.f 補正

SXC13

SYC13 −1.818
−1A

SXC21 0.182 A
−2

SYC21 3.066 A



C

Read Optics
s1(m) 0
s2(m) 500
Set ref
Clear ref
Plot orbit
File syc21_2.dat
Write DATA

Steering SY_C2_1
Read
I(A)
Set

Steering(X) SXC21
K0 -2.641293
Set Clear
5 Steering(Y) SYC21
K0 -2.682523
Set Clear

Select Q
QF272
QD274
QF274
QD282
QF282
QD284
QF284
QD310
QF310
QD314

K1 -.4010058
AF 1
Set ref
Set

average
x ◆ y xy
Read SPDATA
Plot
Set ref

Add
EPS .03
Calc
Show Fudge
Set Fudge
Clear Fudge

phase

~~Esc~~

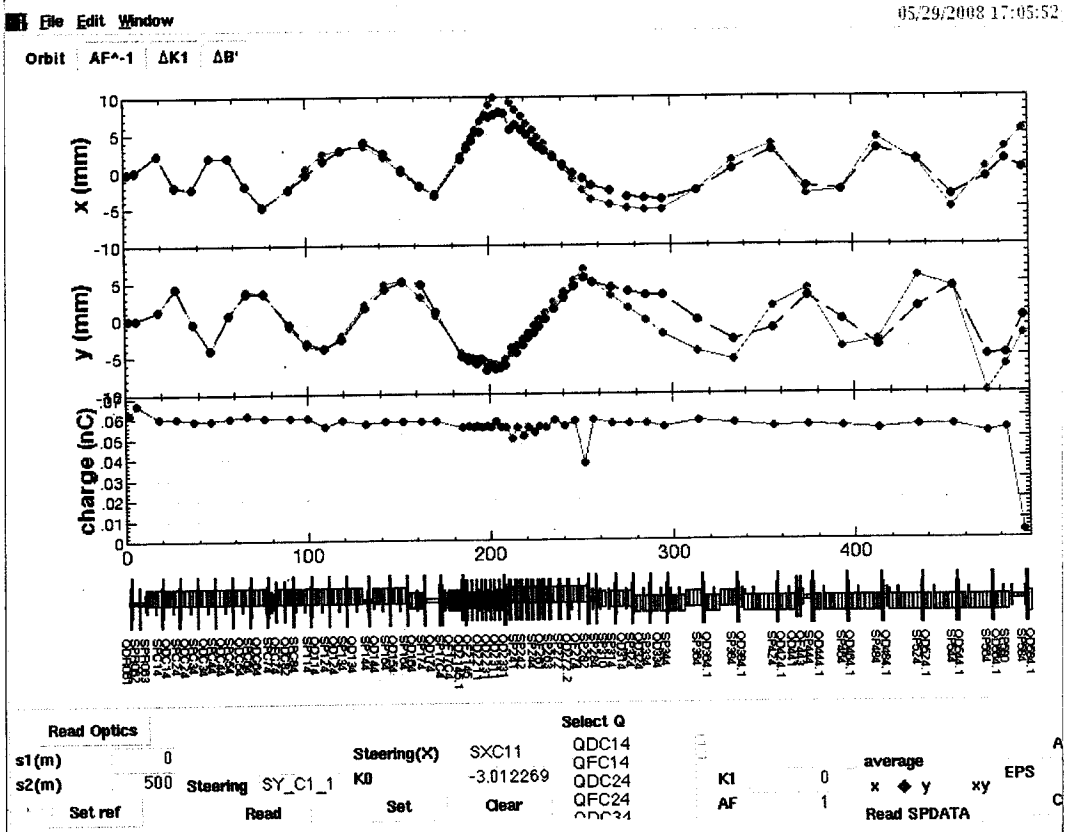
エラー1回 直すと、8つクレストが合わせます.

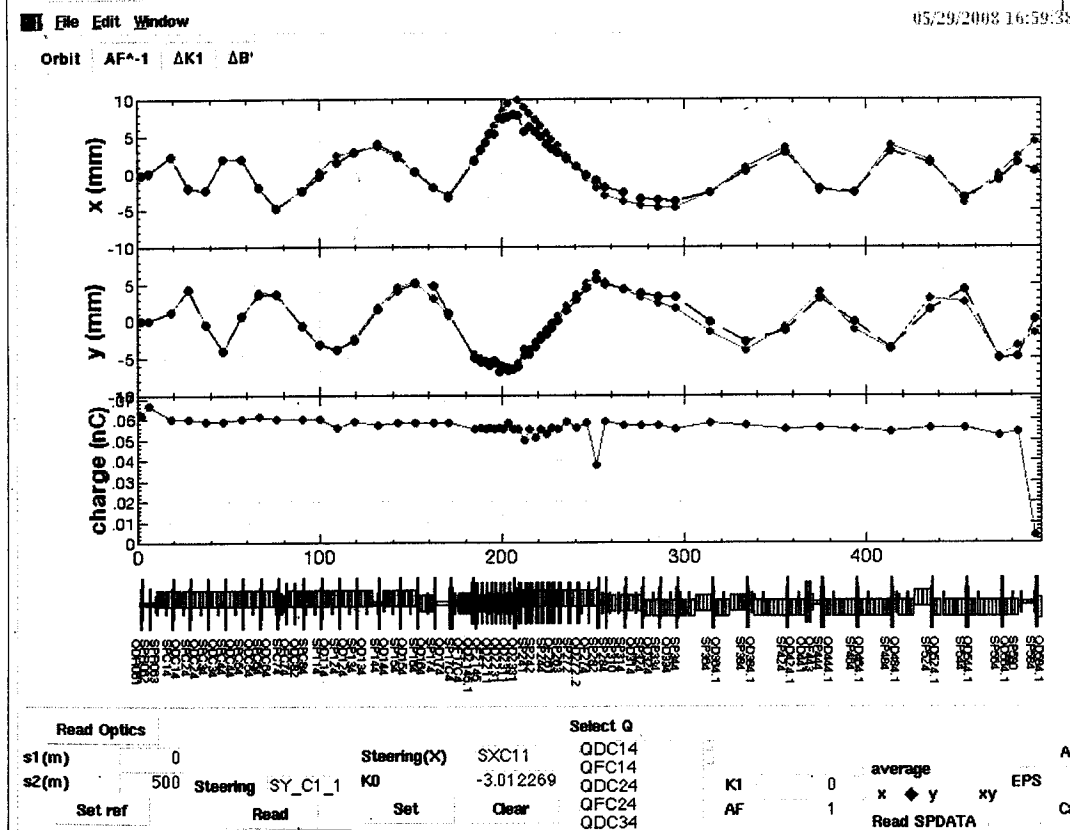
2.5 GeV

−2A ではLossする → 軌道補正.

SXC21 ~~2A~~ ~~1.5A~~ −2A
SYC21 −2A, +2A.

modelと合っている. 再現はできた.



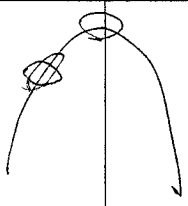


← designを5/27のsaltで読んで計算 (10:20)

230 Esを 2 kV 下げていた

phasing (Topを scan すること)

3GHz (300ps) (e^- +5° / 8nC +~~5~~ 10° ずらしている)

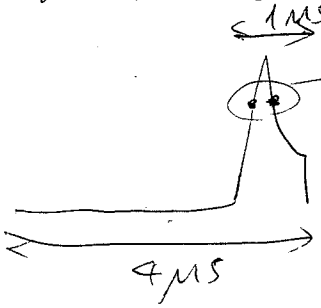


timing

4μs RFの

SLEDは 1μsのwidth あって、その peakを scan

10ns で合わせる (1.8nsで合わせる)



Sabotは、phasing 結果を読んでいるが、

timing は、読んでいない。

Esを~~変えると~~ ~~phasing が~~ 変わる。

$V_c(\phi_c(E_s), E_s)$ $\Delta\phi_c \sim 8° \leftarrow \Delta E_s = 1$MV (平均)

(クレストphase)

Esを変えると、ϕ_cも 変わってしまう。

実際は、Esのみ 変えて、ϕ_c は sabotに 反映されている

理屈

KLYから

出てくる e^- 群が

Esで加速されるが、

Esを下げると e^- の

速度が 遅くなって

phaseも ずれる。

ような

方針 → sabotに Esを 変えたら ϕ_cも 計算値で

変えてしまうか??

- Es も ϕ_cも 読まない

(∵ Operatorが、V_cを一定に保つように

調整するから。

→ 右川さんの方で 計算して (ϕ_cを) Sabotに 反映することにした

ϕ_cと Esの関係は、測定すること。

LER Septum 付近 スクロールポンプ故障のため Study

'08/5/30 C07ターン以降を 大西 小川, 菊地

1.7 GeV でビームを通す. C-3 まではビームは通るが不安定

軌道補正. (by 三鈴本氏)

C6-9 で. ビームがいろかったため. ビームロス

11:00 エネルギーで Normalize した Q の磁場を set する.
(K値は同じ)

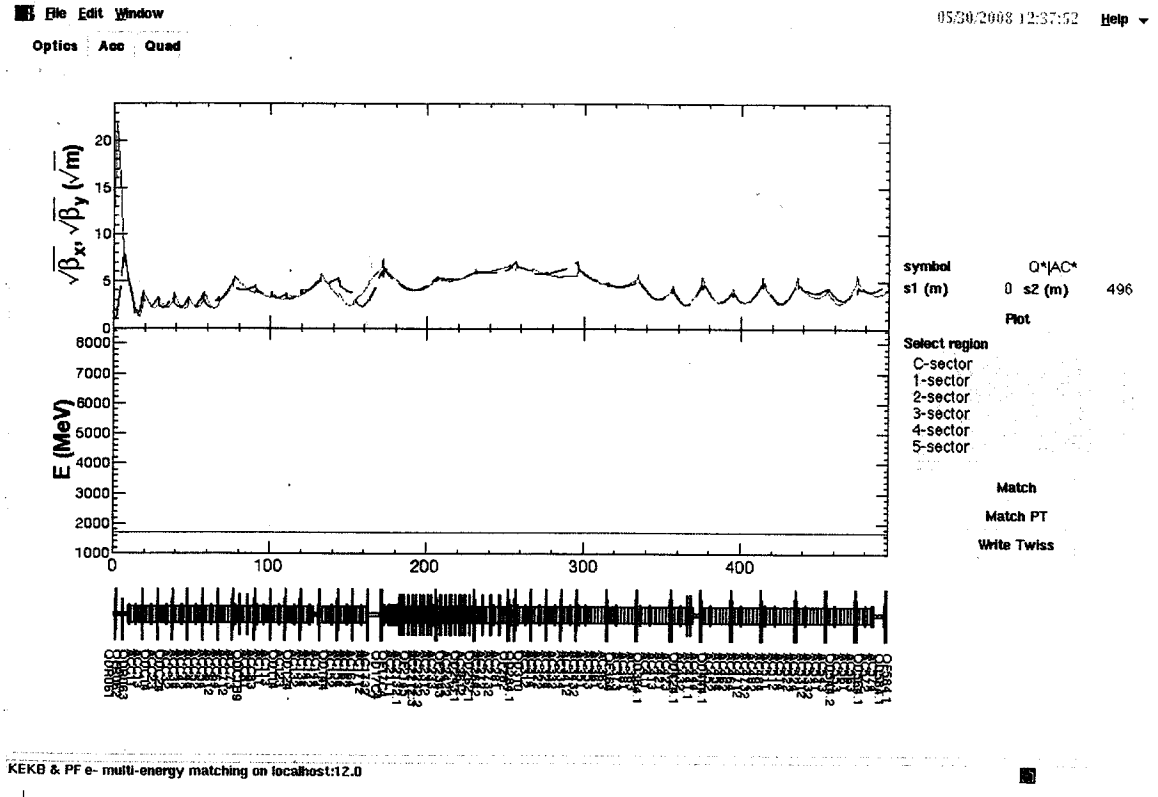
1ターンまで通る. 軌道補正

11:46 PF-A1 E_{end} = 1.7 GeV (2008/05/30 11:46:49 SABOT)

SXC11 −1[A] +1[A]

Lossしたので. 一旦このopticsはおいておく.

11:55 ☆ ターゲットの Q をしばらくは Optics を load



SABOT 05/30/2008 12:38:45

⊙ pulse coil は off である. (psa1 を選んだ時点で.)

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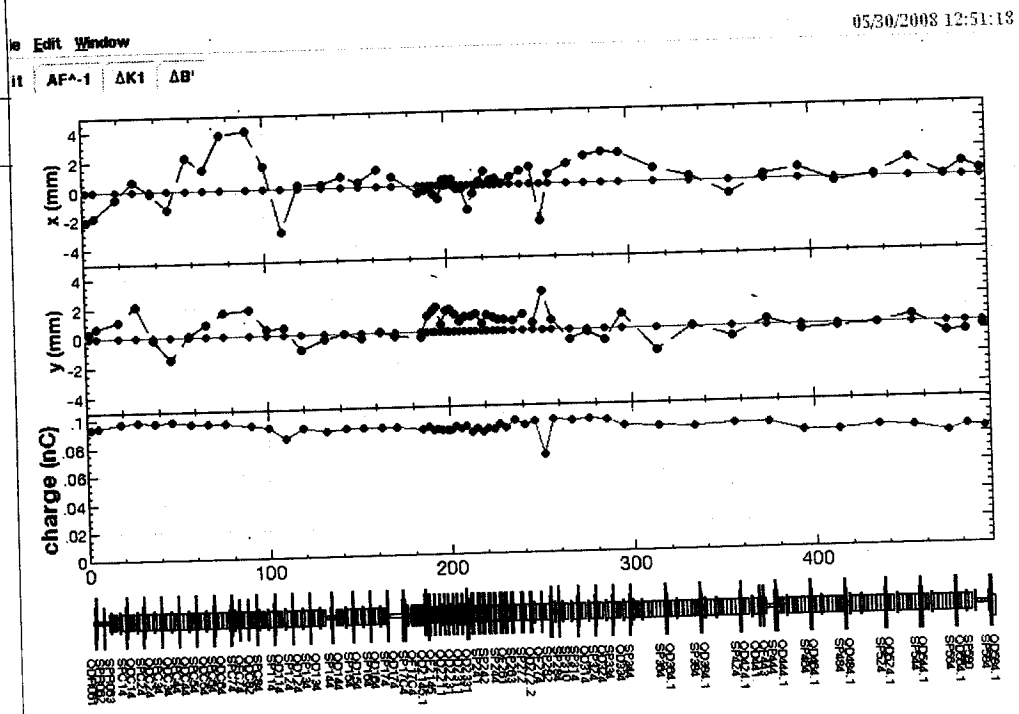
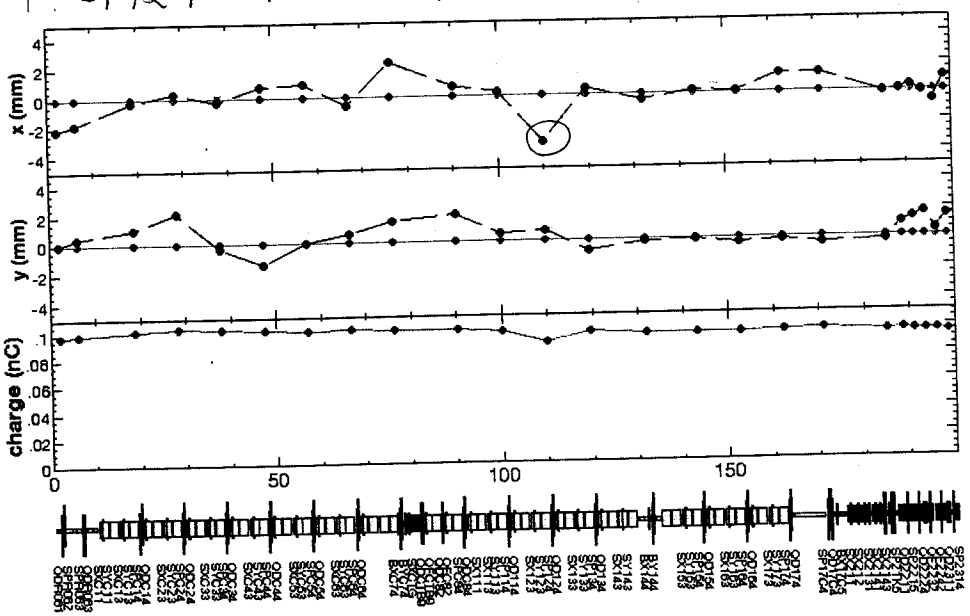
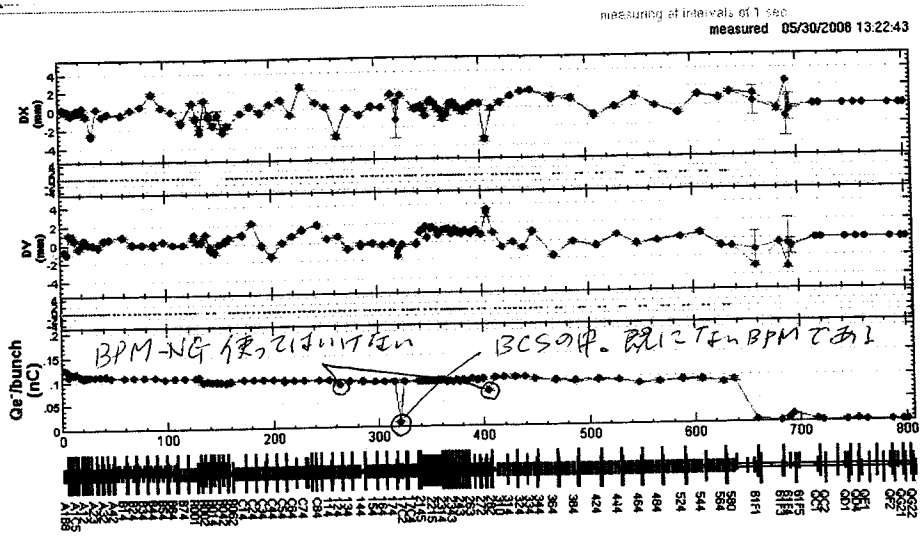


SXC11 −2A では. C74 で Beam Lossする。
0A − (+4A) で測定。

SP124 BPM 変.





(・SXC11 −1A, +1A
・SYC11 −0.5A, +0.5A

(SXC13 −2A, +2A
SYC13 −0.5A, +0.5A.

(SXC33 −2A, +2A
SYC33 −1.5A, +1.5A

(・SXC31 −2A, +.1A
・SYC31 −2A, +2A.

(SXC21 −2A, +2A
SYC21 −1.2A, +1.2A

(SXC23 −2A, +2A
SYC23 −1.5A, +1.5A

SXC11

05/30/2008 13:34:36