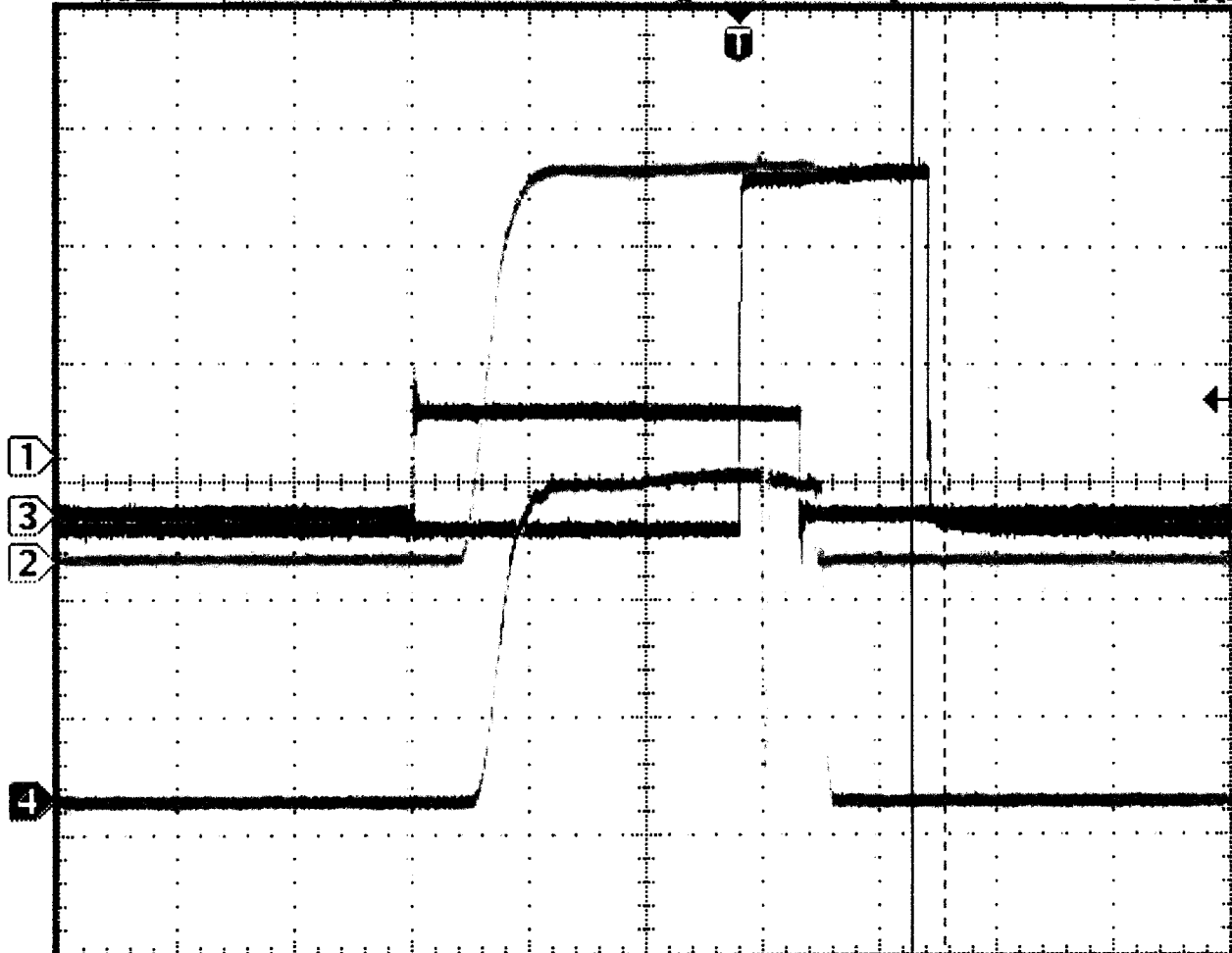


$E_s = 44 \text{ kV}$

Tek 取込中

トリガ検出

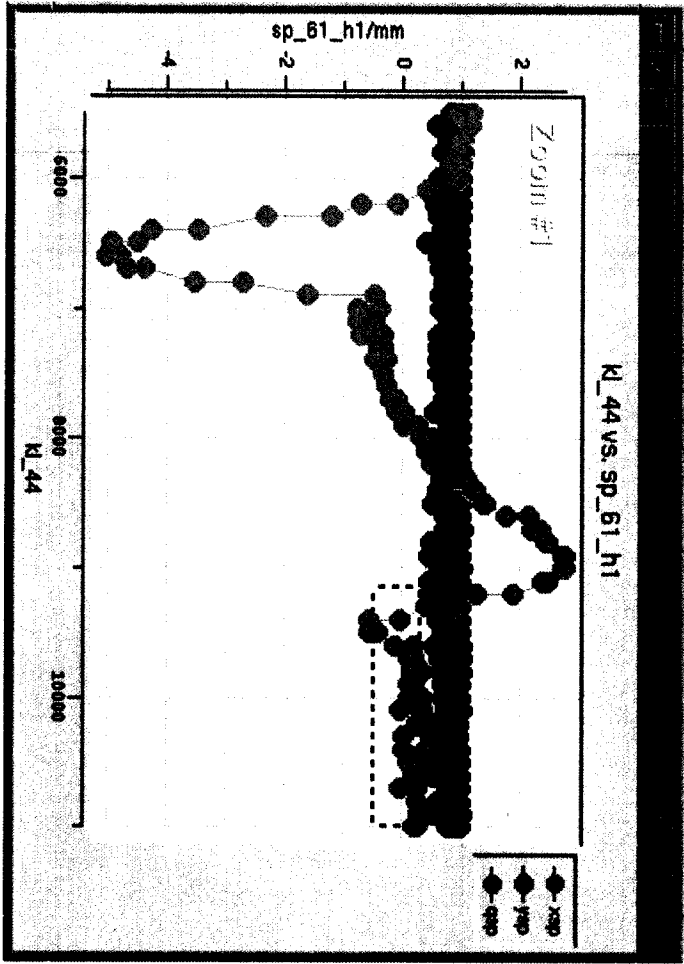


$\Delta$ : 800  $\mu\text{V}$   
 $@$ : 0.00 V  
 $\Delta$ : 280 ns  
 $@$ : 1.46  $\mu\text{s}$

Ch1	1.00 V $\Omega$	Ch2	↓50.0mV $\Omega$	M	1.00 $\mu\text{s}$	A	Ch1	f	1.02 V
Ch3	5.00 V	Ch4	↓20.0mV $\Omega$						

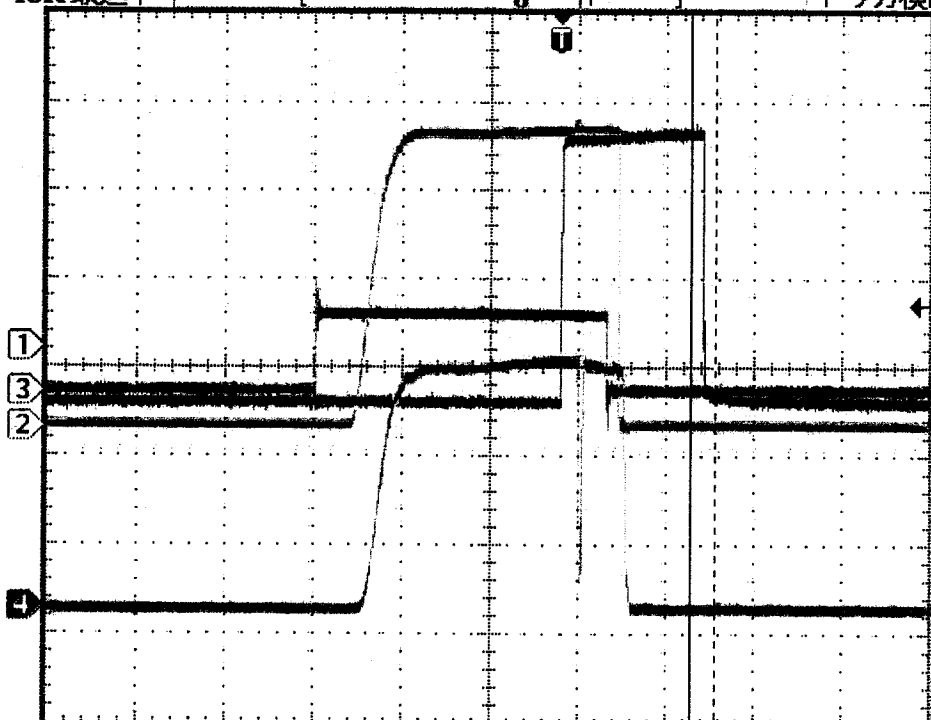
58.20 %

11 Dec 2006  
15:15:28



Tek 取込中

トリガ検出



Δ: 800μV  
 @: 0.00 V  
 Δ: 280ns  
 @: 1.46μs

Ch1	1.00 V Ω	Ch2	↓ 50.0mVΩ	M	1.00μs	A	Ch1	∫	1.02 V
Ch3	5.00 V	Ch4	↓ 20.0mVΩ <sup>Ω<sub>IN</sub></sup>						

58.20 %

11 Dec 2006  
15:15:28

106

12/12

17:25

# Multi Energy Study for KEKB $e^-$

菊池 大西

[目的]

1 mC の PF  $e^-$  を 減速 phase で 1 作. 2.  
KEKB  $e^-$  へ 入射 可.  
(HER)

1. ECS を 2.5 GeV に set (2 Energy を 確  
KLY 3-1 を Stand by に 可)  
SB 3, 4, 5  $\Delta\phi = +13^\circ$

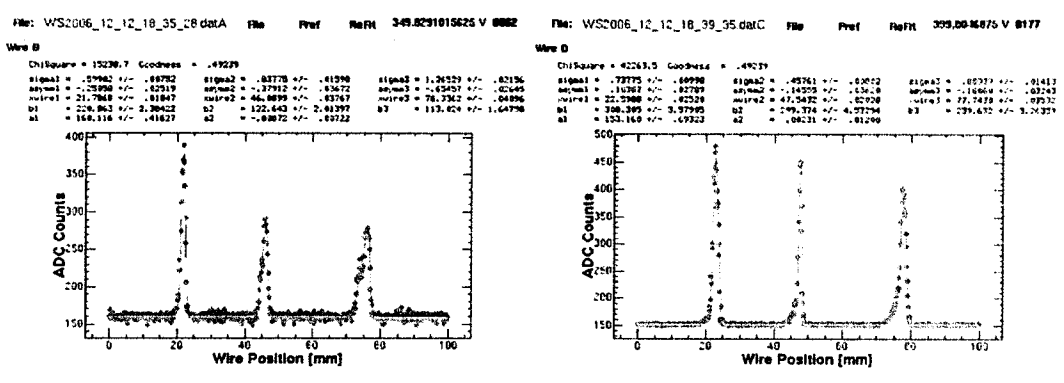
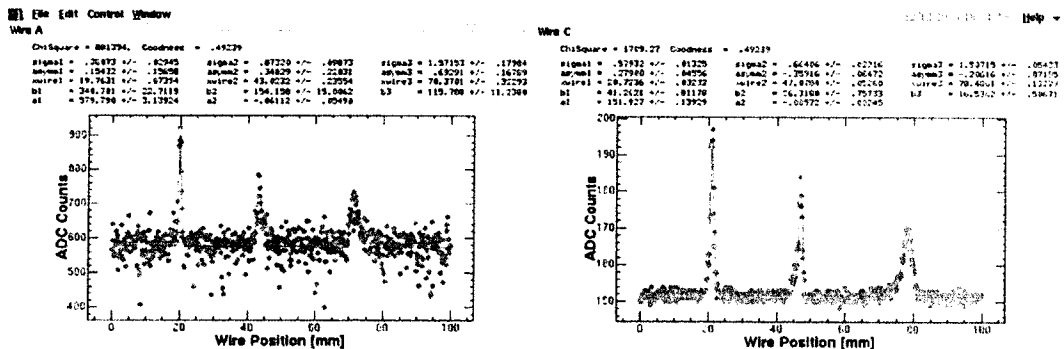
2.

- 3, 4, 5 を 79 - 0.5 減速 位相.

ECS 初期化 1 作  
(Ecm)  
 $E_{set} = \underline{3.308}$  GeV 可.  
 $E_{beam} = 2.5$  GeV 1 作.

- ◎ 79 以下 の Q mag を set 1 作.  
3 Matching 値 に

PTI 2.5GV 1-mC Beam



File: WSC2006\_12\_12\_18\_35\_28.datA File Pref ReFH 349.8231015625 V 0082

File: WSC2006\_12\_12\_18\_39\_35.datC File Pref ReFH 399.804675 V 0177

File: WSC2006\_12\_12\_18\_37\_22.datB File Pref ReFH 399.804675 V 0078

File: WSC2006\_12\_12\_18\_40\_36.datD File Pref ReFH 399.804675 V 0178

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

$\beta_x$ GAKS74.2+1 [m]	15.400	$\beta_y$ GAKS74.2+1 [m]	3.532
$\alpha_x$ GAKS74.2+1	.175	$\alpha_y$ GAKS74.2+1	-.443
$\epsilon_x$ [m]	1.5141E-8	$\epsilon_y$ [m]	5.5107E-8
$\gamma_x$ [r.mm.mrad]	74.075	$\gamma_y$ [r.mm.mrad]	269.605
DMag x :	1.258	DMag y :	1.593
cDMag x :	1.4092E-8	cDMag y :	6.9127E-8
$\gamma$ DMag x :	73.347	$\gamma$ DMag y :	338.194

Optics Plot

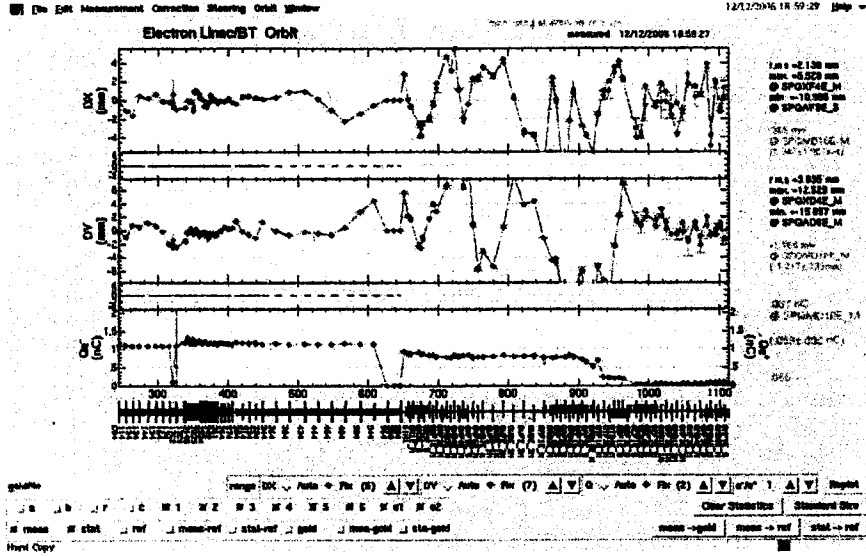
Wire Selection  
3-wire:ABC 3-wire:ABD 3-wire:ACD 3-wire:BCD  
4-wire:ABCD

Err(mean), no n: 0 Err(opt) (%): 0

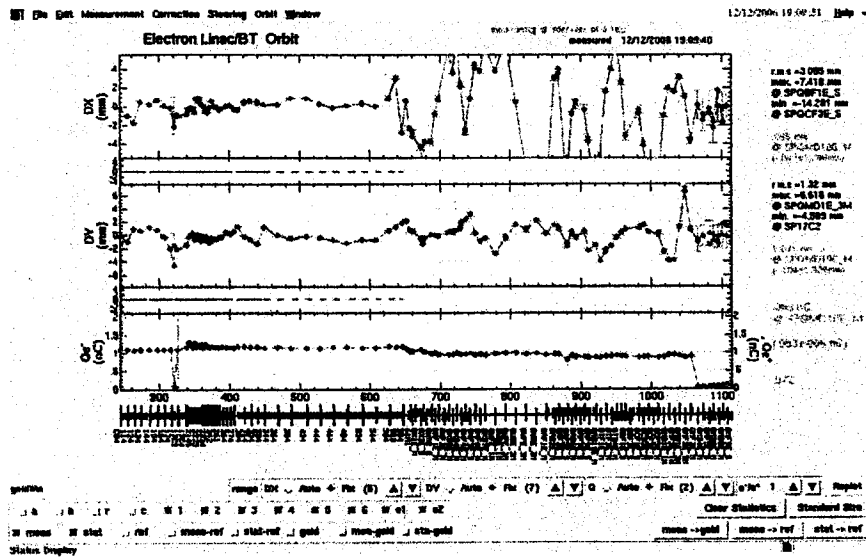
\*Calculate Optics\* Save All Parameters

Group values were SAVED to Adstat1/K4FB/Wire/IRACSector5/H4/dats/Ovalofitresave\_2006\_12\_12\_18\_35\_28.datA

. EGet 7" BTe 通過



. LINAC 軌道を補正了

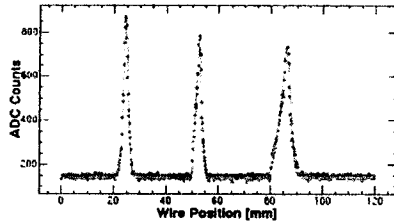


"BTe|2\_12\_2006\_19:12:53" 1= steering 修正 save  
19:23:23" 1= Q magnet 修正 save

File Edit Control Window

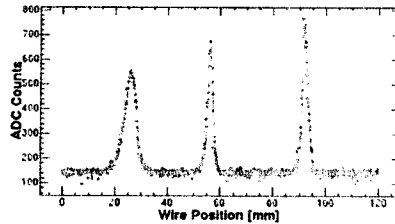
Wire A

ChiSquare = 24234. Goodness = .45387  
 signal = 89981 +/- 81864 sigma2 = 1.82472 +/- .01232 sigma3 = 1.97466 +/- .02132  
 signal = 11942 +/- 83239 sigma2 = 1.74271 +/- .02836 sigma3 = 1.73716 +/- .02095  
 signal = 242873 +/- 81676 sigma2 = 32.5291 +/- .08333 sigma3 = 26.1804 +/- .05467  
 signal = 446232 +/- 790228 sigma2 = 399.498 +/- 6.61779 sigma3 = 325.944 +/- 6.79779  
 s1 = 147.119 +/- 1.76236 s2 = .89781 +/- .02895



Wire C

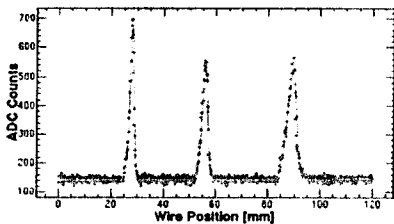
ChiSquare = 17975. Goodness = .45387  
 signal = 229817 +/- 82584 sigma2 = 1.88109 +/- .01447 sigma3 = 1.14183 +/- .01337  
 signal = 72068 +/- 82256 sigma2 = 1.88109 +/- .01447 sigma3 = 1.14183 +/- .01337  
 signal = 262789 +/- 86302 sigma2 = 54.2378 +/- .03619 sigma3 = 41.7734 +/- .07372  
 signal = 385112 +/- 848952 sigma2 = 472.849 +/- 2.44556 sigma3 = 329.184 +/- 5.44271  
 s1 = 144.195 +/- 1.28742 s2 = .81259 +/- .01718



File: WS2006\_12\_12\_19\_20\_59.data File Pref ReFit 463.7705878125 V 248

Wire B

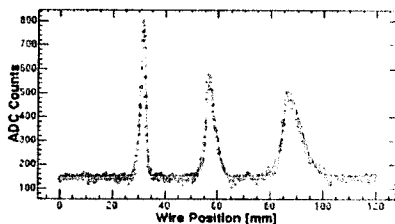
ChiSquare = 85956.7 Goodness = .45387  
 signal = 82274 +/- 49881 sigma2 = 1.86372 +/- .01242 sigma3 = 1.64168 +/- .01792  
 signal = 26229 +/- 81794 sigma2 = 1.86372 +/- .01242 sigma3 = 1.64168 +/- .01792  
 signal = 279482 +/- 81961 sigma2 = 36.8228 +/- .02916 sigma3 = 28.4536 +/- .03787  
 signal = 523471 +/- 427849 sigma2 = 398.984 +/- 3.66149 sigma3 = 384.597 +/- 3.87444  
 s1 = 145.487 +/- 0.17958 s2 = .81164 +/- .01182



File: WS2006\_12\_12\_19\_18\_54.datC File Pref ReFit 463.7705878125 V 2278

Wire D

ChiSquare = 159241. Goodness = .45387  
 signal = 1.98199 +/- .01988 sigma2 = 1.60319 +/- .02104 sigma3 = 3.68061 +/- .03277  
 signal = 17617 +/- 82441 sigma2 = 1.60319 +/- .02104 sigma3 = 3.68061 +/- .03277  
 signal = 214773 +/- 82568 sigma2 = 24.9471 +/- .01708 sigma3 = 86.2582 +/- .02542  
 signal = 622517 +/- 824882 sigma2 = 346.889 +/- 4.88702 sigma3 = 274.739 +/- 2.67444  
 s1 = 146.746 +/- 1.12048 s2 = .82148 +/- .01653



File: WS2006\_12\_12\_19\_19\_52.datB File Pref ReFit 463.7705878125 V 2888

Wire E

ChiSquare = 159241. Goodness = .45387  
 signal = 1.98199 +/- .01988 sigma2 = 1.60319 +/- .02104 sigma3 = 3.68061 +/- .03277  
 signal = 17617 +/- 82441 sigma2 = 1.60319 +/- .02104 sigma3 = 3.68061 +/- .03277  
 signal = 214773 +/- 82568 sigma2 = 24.9471 +/- .01708 sigma3 = 86.2582 +/- .02542  
 signal = 622517 +/- 824882 sigma2 = 346.889 +/- 4.88702 sigma3 = 274.739 +/- 2.67444  
 s1 = 146.746 +/- 1.12048 s2 = .82148 +/- .01653

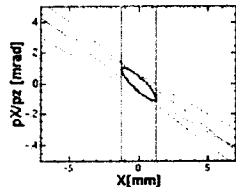
File: WS2006\_12\_12\_19\_17\_54.datD File Pref ReFit 463.7705878125 V 2147

File Edit Window

Wire Scan Optics Calculate Matching

X phase space at Wire A

X phase space at Matching Point



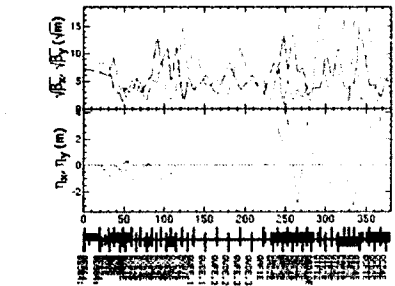
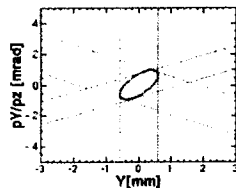
Results of Measurement

$\beta_x$ @ MW.1 [m] :	10.220	$\beta_x$ @ MW.1 [m] :	33.345
$\alpha_x$ @ MW.1 :	-0.09	$\alpha_x$ @ MW.1 :	1.019
$r_x$ [mm] :	6.1516E-8	$r_x$ [mm] :	4.1456E-8
$\gamma_x$ [1/m] :	982.887	$\gamma_x$ [1/m] :	643.894
Rmag x :	1.538	Rmag y :	1.093
rImag x :	9.4635E-8	rImag y :	4.5299E-8
gammaImag x :	1481.280	gammaImag y :	708.043

Optics Plot

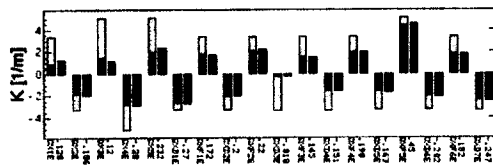
Y phase space at Wire A

Y phase space at Matching Point



Wire Selection  
 3-wire:ABC 3-wire:ABD 3-wire:ACD 3-wire:BCD  
 4-wire:ABCD  
 Err(mess), no of: 0 Err(opt) (%): 0  
 \*Calculate Optics\* Save All Parameters

Output values were saved in /data1/01/EB/Wire/B/Match/FromData/Global/2006\_12\_12\_19\_11\_12.datB  
 changes at wire setting (cm)

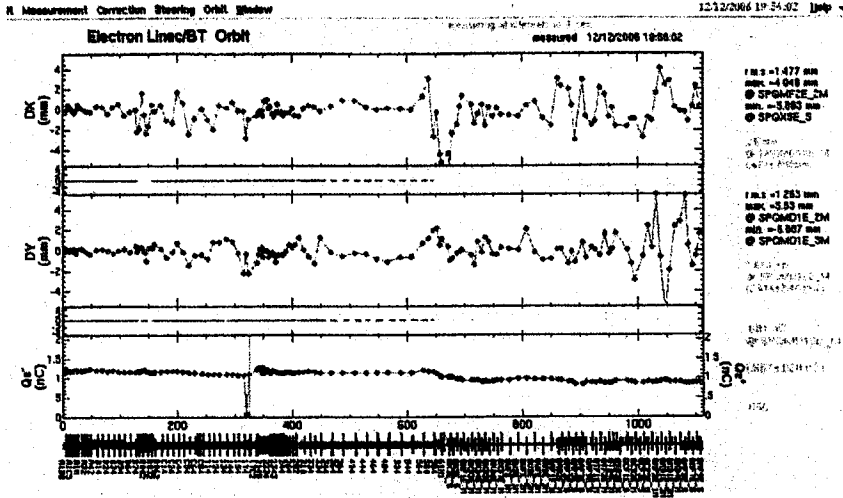


Output values were saved in /data1/01/EB/Wire/D/Match/FromData/Global/2006\_12\_12\_19\_11\_12.datD

KEKB-HER  $\rightarrow$   $\lambda$ 射 4.0 mA/s @ 50 Hz.

( 軽く septum 調整した代りに入れた )

• Energy を調整して、BT 第1 Arc の軌道を補正した。



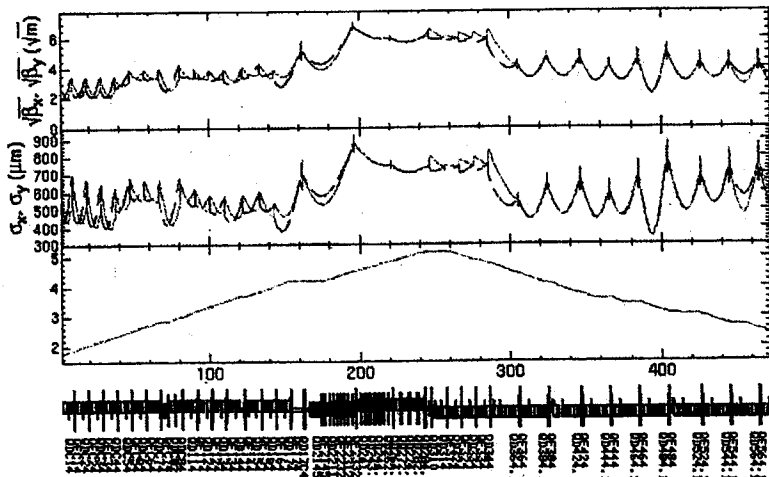
20:35 @ CE77-P-5. Matching (to Optics & load

• 8 GeV.

Command Set Magnet Plot SAD Matching Window 12/12/2006 20:43:58

C-5 sector (Multi Mode)

Quad | Acc



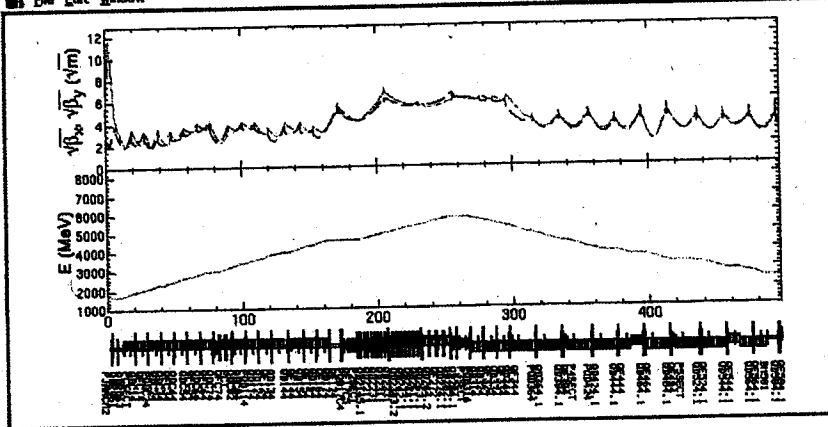


SABOT

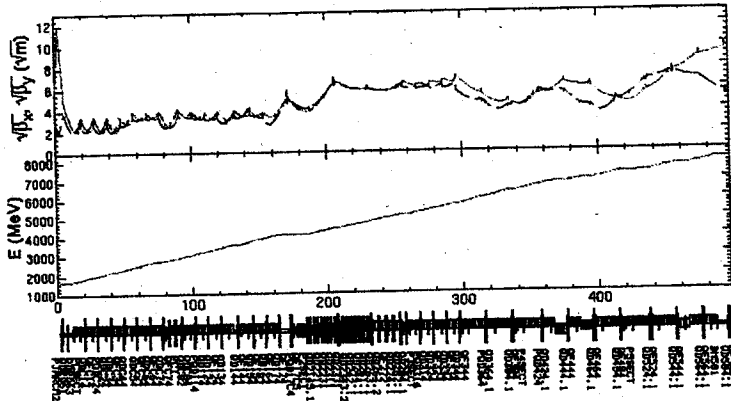
Vacdata 2006 12 12 18:31:38 2.5 GeV  
19:21:28 8 GeV  
20:46:36 8 GeV

12/12/2006 20:58:11 Help

File Edit Window



Select Optics  
Set Initial Twiss  
Read file(Ac)  
Read file(Out)  
Plot



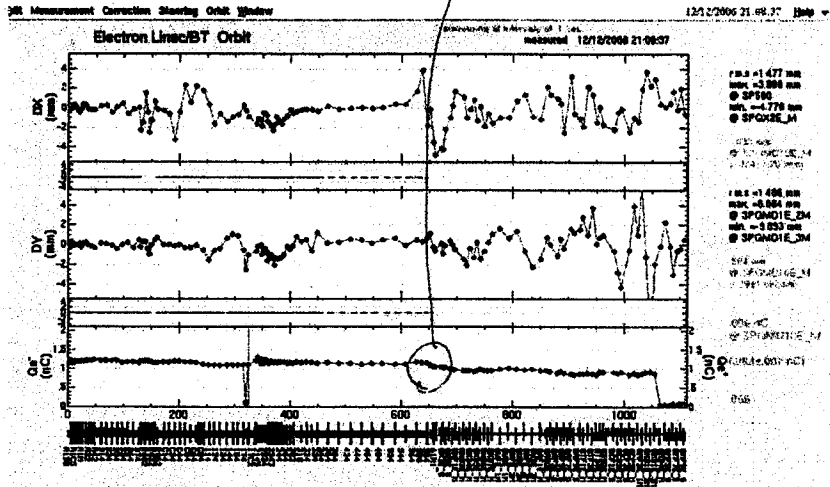
Hard Copy



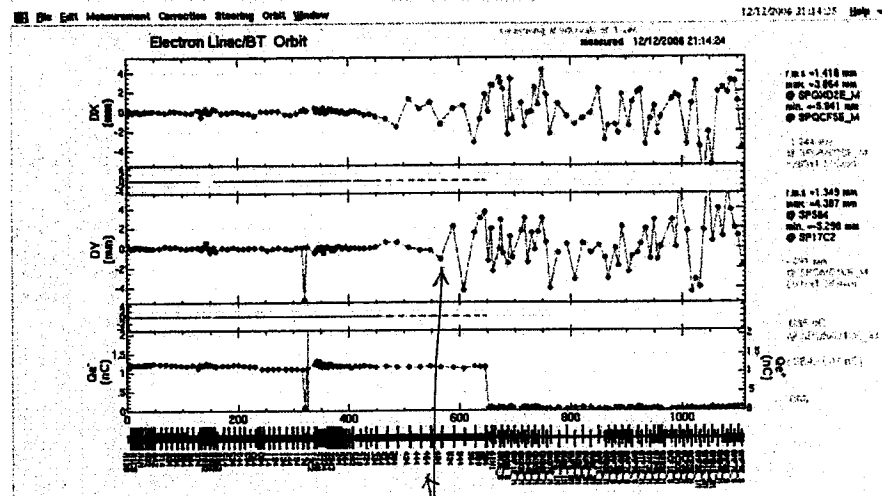
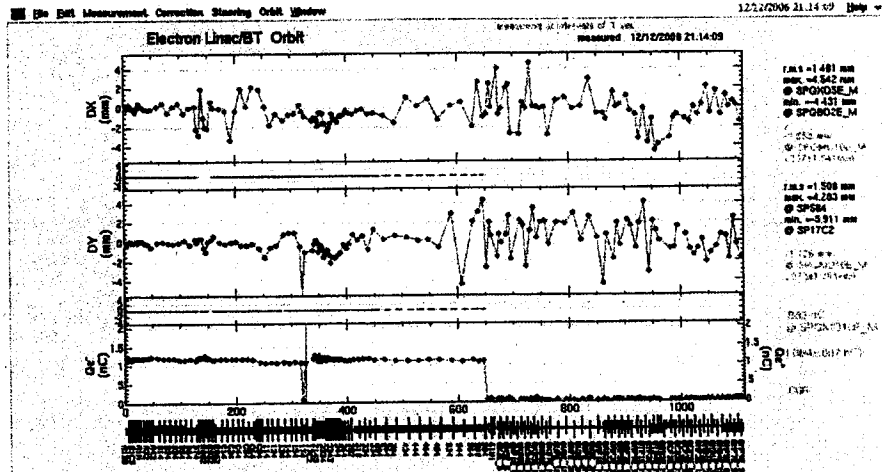
9.08

8GeV

117E のように見えている



2.5GeV  
(減速位相)



484

- HERIC 入射を試みず, 1.5 mA/s @ 25 Hz.
- Noise 高い.
- P.S.D の時より悪い.
- Matching をすると良くすると, 思われる.

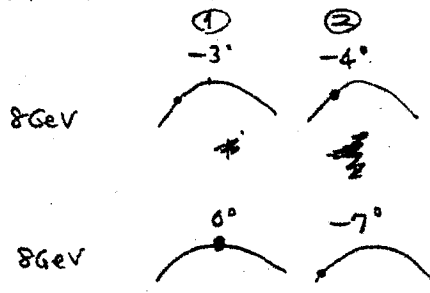
06.12.20 (水)

12:05 KEKB  $e^-e^-$

bpm ← x  
 QX2E 0mm — 8GeV  
 — 方向 high energy

① (C, 1, 2) +3° TOP

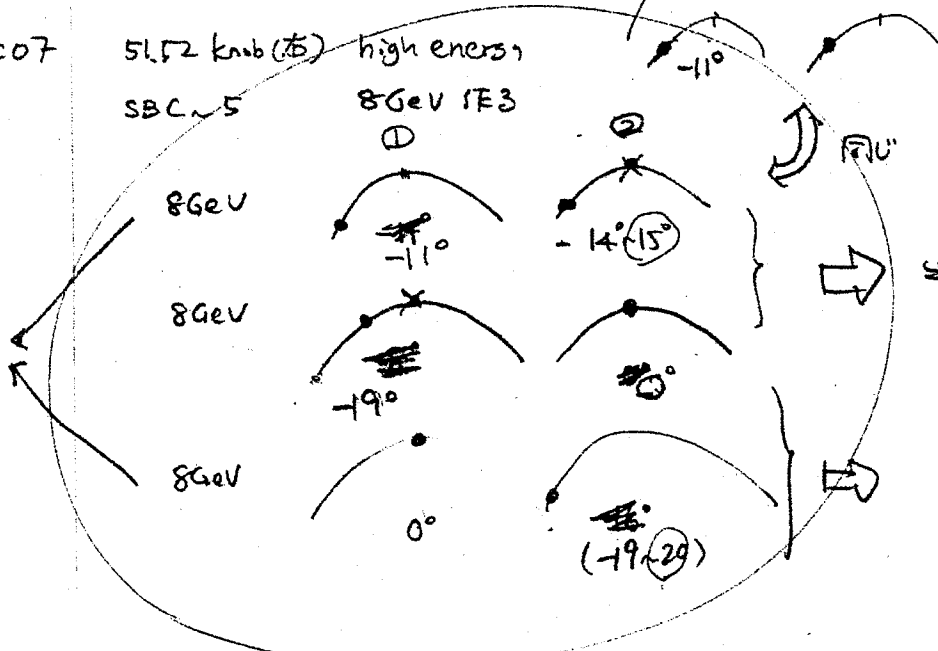
② (3, 4, 5) +4° TOP



4.10 phaseから戻す (T=0.2  
 data=1.27  
 3)

13:07

51.52 knob (右) high energy  
 SBC ~ 5 8GeV IF3



8GeV (bpm=0)

4.10 phaseから戻す 14

$$\begin{cases} E_1 = 2.92 \text{ GeV} \\ E_2 = 6.3 - E_1 \\ = 3.38 \text{ GeV} \end{cases}$$

$$\begin{cases} E_1 = 3.41 \\ E_2 = 2.89 \end{cases}$$

$$\sqrt{5} = 2.236$$

$$\begin{array}{r} 1.17 \\ 1.17 \\ \hline 8.19 \\ 1.17 \\ \hline 1.17 \\ \hline 1.3689 \end{array}$$

