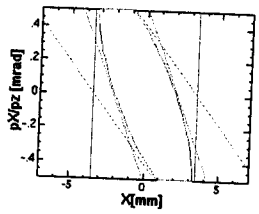
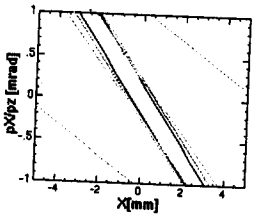
File Edit Window

WireScan Optics Calculate Matching

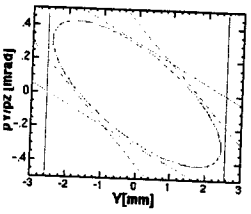
X phase space at Wire A



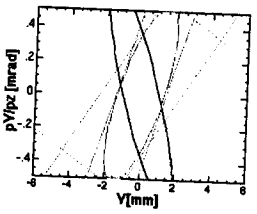
X phase space at Matching Point



Y phase space at Wire A



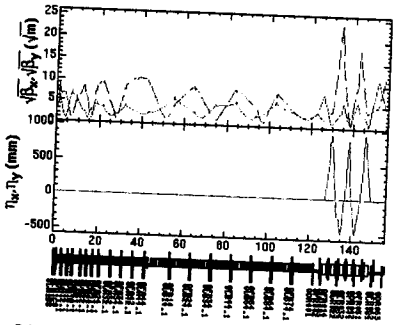
Y phase space at Matching Point



Results of Measurement

β_x @SCR003 [m] :	27.356	β_y @SCR003 [m] :	5.554
α_x @SCR003 :	9.673	α_y @SCR003 :	-1.073
ε_x [m] :	1.2455E-6	ε_y [m] :	7.0718E-7
$\gamma\varepsilon_x$ [π.mm.mrad] :	4143.423	$\gamma\varepsilon_y$ [π.mm.mrad] :	2352.656
Bmag x :	1.333	Bmag y :	4.495

Optics Plot

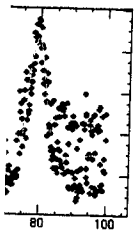


Wire Selection

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

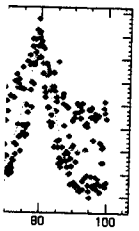
4-wire:ABCD

"Calculate Optics" Save All Parameters



SB1_M
S
KR_4

Cmm



alues were SAVEd to /data1/KEKB/Wire/LINAC/sectorB/positron/data/Qvalue/lqname_2002_12_11_19_57_10.dat0

File: WS2002_12_12_0_4_47.datB File Pref ReRt -379.814 V

Hard Copy

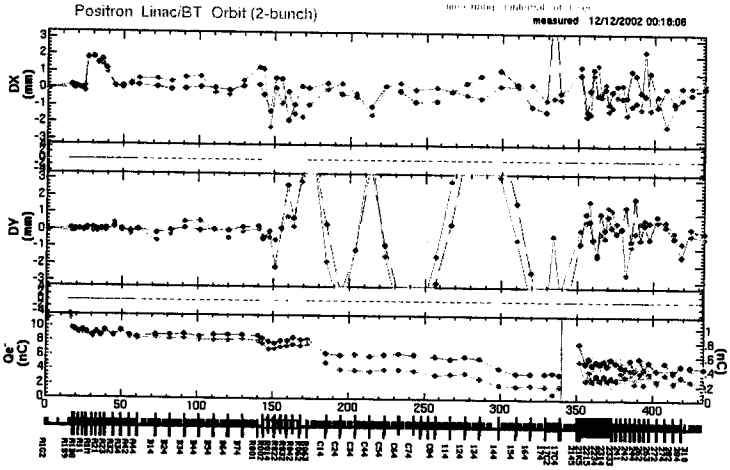
File: WS2002_12_12_0_7_8.datD File Pref ReRt -379.814 V

File Edit Measurement Correction Steering Orbit Window

Help

Positron Linac/BT Orbit (2-bunch)

measured 12/12/2002 00:16:06



r.m.s =2.629 mm
max. =8.643 mm
@ SPQXF5P_K
min. =-17.04 mm
@ SPQWFP_1A

r.m.s =3.583 mm
max. =16.724 mm
@ SPQXD4P_A
min. =-18.502 mm
@ SPQAD3P_A

golde 03 18 2002 20:17:13.dat range DX Auto + Fix (3) DY Auto + Fix (3) Q Auto + Fix (2) e'/e' 10 Replot

Clear Statistics Standard Size

meas -> gold meas -> ref stat -> ref

single double

Hard Copy

AL_M
S
A2_4

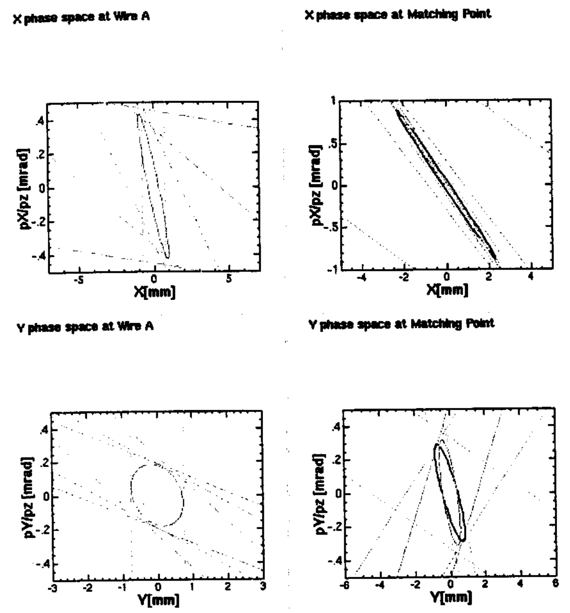
H.5mm

File Edit Window

WireScan Optics Calculate Matching

12/12/2002 00:32:04 Help

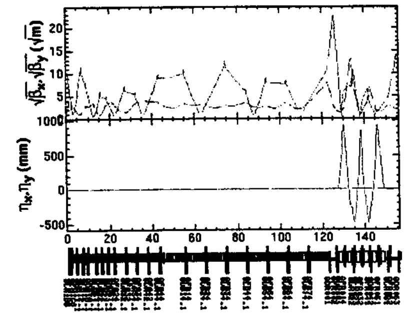
+1.5



Results of Measurement

β_x @SCR003 [m] :	221.581	β_y @SCR003 [m] :	2.694
α_x @SCR003 :	85.539	α_y @SCR003 :	1.024
ϵ_x [m] :	1.5352E-7	ϵ_y [m] :	1.3143E-7
$\gamma\epsilon_x$ [π.mm.mrad] :	510.737	$\gamma\epsilon_y$ [π.mm.mrad] :	437.237
Bmag x :	3.434	Bmag y :	1.302

Optics Plot

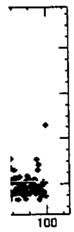


Wire Selection

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

◆ 4-wire:ABCD

Calculate Optics Save All Parameters



-379.814 V

Qmag values were SAVEd to /ldata1/KEKB/Wire/LINAC/sectorB/positron/data/Qvalue/lqname_2002_12_11_19_57_18.dat0

-379.814 V

Hard Copy

(Two bunch) 1st 測定)

12/12/2002 00:38:29 Help

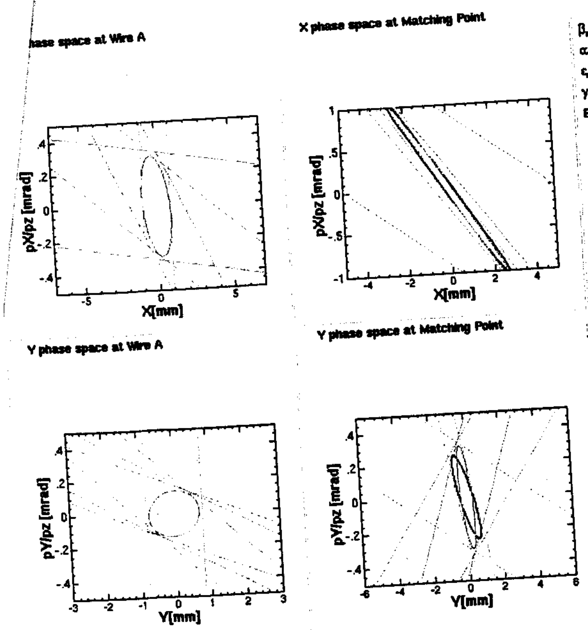
Help

Edit Window

Optics Calculate Matching

+2mm

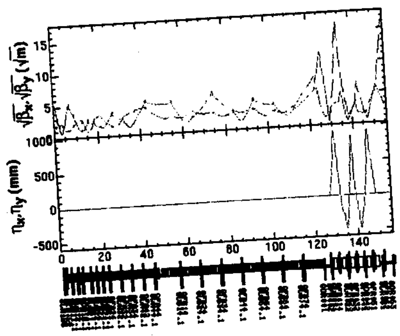
(1st only)



Results of Measurement

β_x @SCR003 [m] :	59.111	β_y @SCR003 [m] :	1.832
α_x @SCR003 :	23.175	α_y @SCR003 :	.672
ϵ_x [m] :	2.7316E-7	ϵ_y [m] :	9.9021E-8
$\gamma\epsilon_x$ [π.mm.mrad] :	908.760	$\gamma\epsilon_y$ [π.mm.mrad] :	329.426
Bmag x :	1.329	Bmag y :	1.8

Optics Plot



Wire Selection

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

◆ 4-wire:ABCD

Calculate Optics Save All Parameters

Qmag values were SAVEd to /ldata1/KEKB/Wire/LINAC/sectorB/positron/data/Qvalue/lqname_2002_12_11_19_57_18.dat0

165

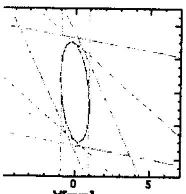
+ 2mm (Two bunch)

Window

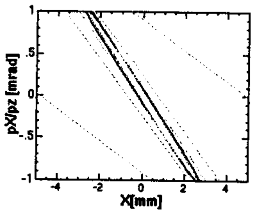
Optics Calculate | Matching

12/12/2002 00:42:31 Help

X phase space at Wire A



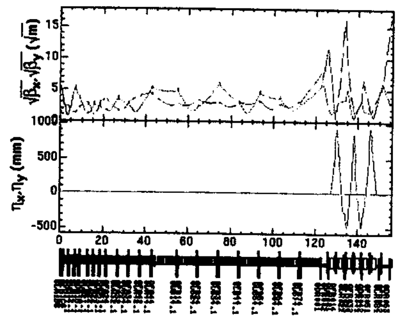
X phase space at Matching Point

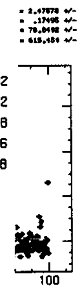


Results of Measurement

β_x @SCR003 [m] :	59.111	β_y @SCR003 [m] :	1.832
α_x @SCR003 :	23.175	α_y @SCR003 :	.872
ϵ_x [m] :	2.7316E-7	ϵ_y [m] :	9.9021E-8
$\gamma\epsilon_x$ [π.mm.mrad] :	908.760	$\gamma\epsilon_y$ [π.mm.mrad] :	329.426
Bmag x :	1.329	Bmag y :	1.8

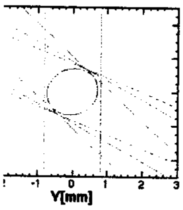
Optics Plot



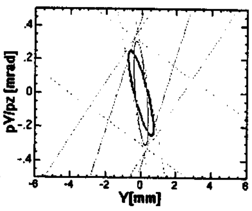


-379.814 V

Y phase space at Wire A



Y phase space at Matching Point

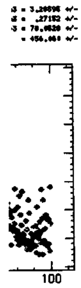


Wire Selection

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

◆ 4-wire:ABCD

"Calculate Optics" Save All Parameters



... SAVEd to /ldata1/KEKB/Wire/LINAC/sectorB/positron/data/Qvalue/lqname_2002_12_11_19_57_18.dat0

File: WS2002_12_12_0_37_43.dat0 File Pref ReFit -379.814 V

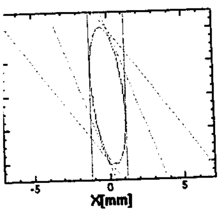
(Two bunch ? 1 bunch ...)

Window

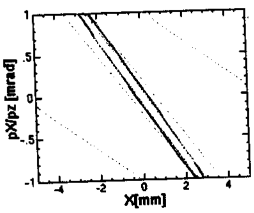
Optics Calculate | Matching

12/12/2002 01:12:42 Help

X phase space at Wire A



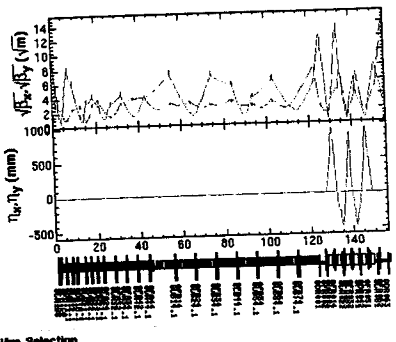
X phase space at Matching Point



Results of Measurement

β_x @SCR003 [m] :	67.296	β_y @SCR003 [m] :	2.433
α_x @SCR003 :	24.814	α_y @SCR003 :	.927
ϵ_x [m] :	4.1926E-7	ϵ_y [m] :	5.1171E-8
$\gamma\epsilon_x$ [π.mm.mrad] :	1394.804	$\gamma\epsilon_y$ [π.mm.mrad] :	170.238
Bmag x :	1.324	Bmag y :	1.38

Optics Plot

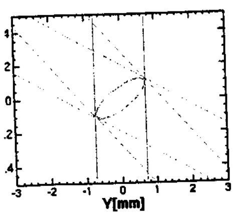


r.m.s =2.832 mm
max. =8.843 mm
@ SPQXF5P_K
min. =-17.04 mm
@ SPQWFP_1A

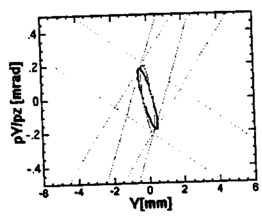
r.m.s =3.549 mm
max. =18.724 mm
@ SPQXD4P_A
min. =-18.502 mm
@ SPQAD3P_A

-379.814 V

Y phase space at Wire A



Y phase space at Matching Point

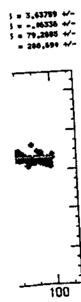


Wire Selection

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

4-wire:ABCD

"Calculate Optics" Save All Parameters



e/e' 10 Replot

Statistics Standard Size

meas -> ref stat -> ref

single double

...lues were SAVEd to /ldata1/KEKB/Wire/LINAC/sectorB/positron/data/Qvalue/lqname_2002_12_12_1_7_58.dat0

-379.814 V

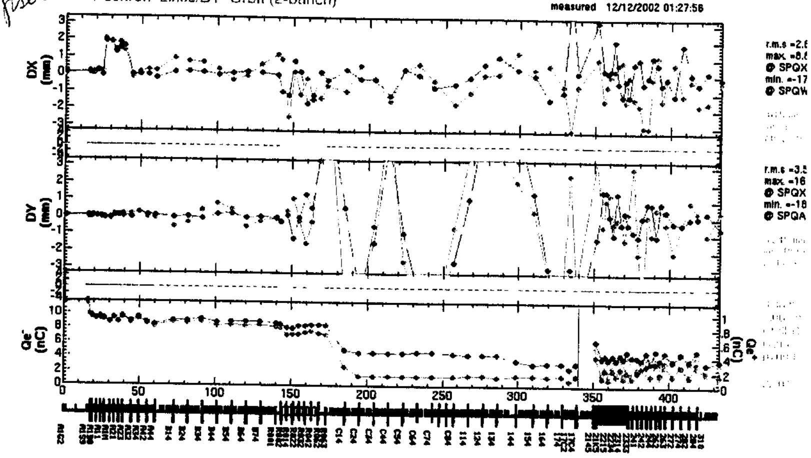
166

File Edit Measurement Correction Steering Orbit Window

Positron Linac/BT Orbit (2-bunch)

2mm offset

measured 12/12/2002 01:27:56



golde 03 10 2002 20:17:13.dat

range DX Auto Fix (3) DY Auto Fix (3) Q Auto Fix (2) e⁺/e⁻ 10

a b r c 1 2 3 4 5 6 p1 p2

meas stat ref meas-ref stat-ref gold mes-gold sta-gold

meas stat ref meas-ref stat-ref gold mes-gold sta-gold

Hard Copy

Clear Statistics

meas ->gold meas -> ref

single

+1mm fin 11dec2002fesRUG-1 BPM data file に記録した。

SP-1

Edit Window

Wire C

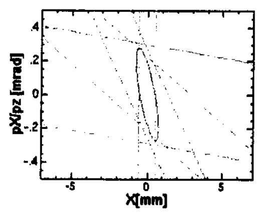
12/12/2002 01:29:22 Help

File Edit Window

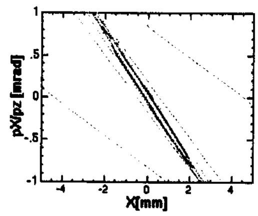
WireScan Optics Calculate Matching

12/12/2002 01:39:44 Help

X phase space at Wire A



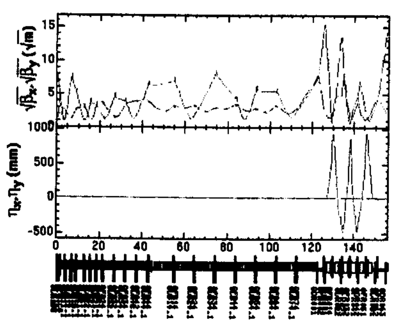
X phase space at Matching Point



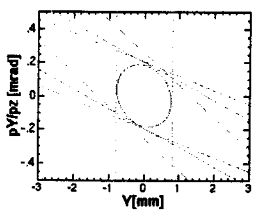
Results of Measurement

β_x @SCR003 [m] :	102.547	β_y @SCR003 [m] :	2.514
α_x @SCR003 :	39.623	α_y @SCR003 :	.976
ϵ_x [m] :	1.3734E-7	ϵ_y [m] :	1.4144E-7
$\gamma\epsilon_x$ [π.mm.mrad] :	456.915	$\gamma\epsilon_y$ [π.mm.mrad] :	470.540
Bmag x :	1.735	Bmag y :	1.363

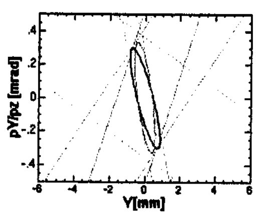
Optics Plot



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

"Calculate Optics" Save All Parameters

379.814 V

379.814 V

Qmag values were SAVEd to /ldata1/KEKB/Wire/LINAC/sectorB/positron/data/Qvalue/lqname_2002_12_12_1_7_58.dat0

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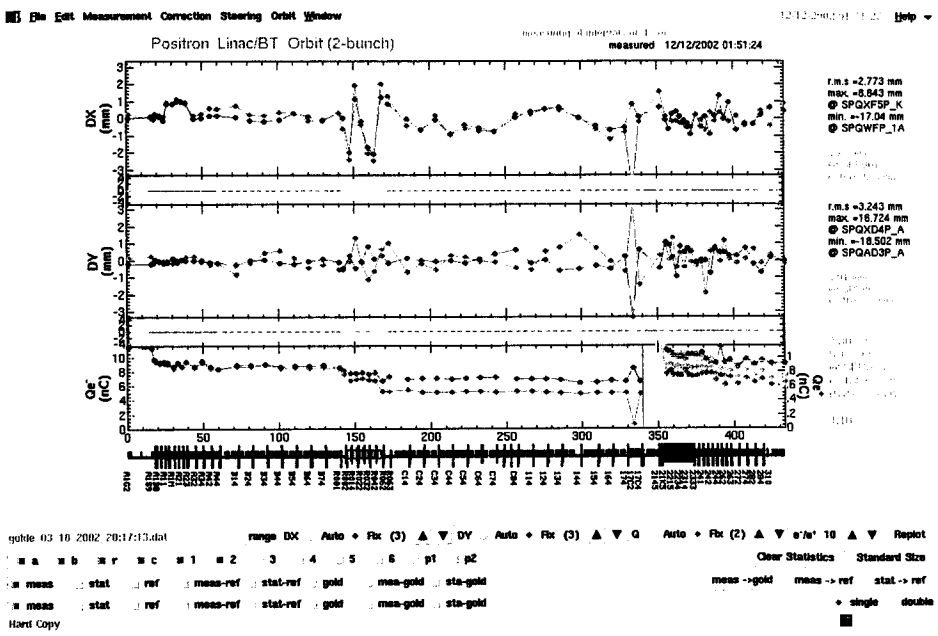
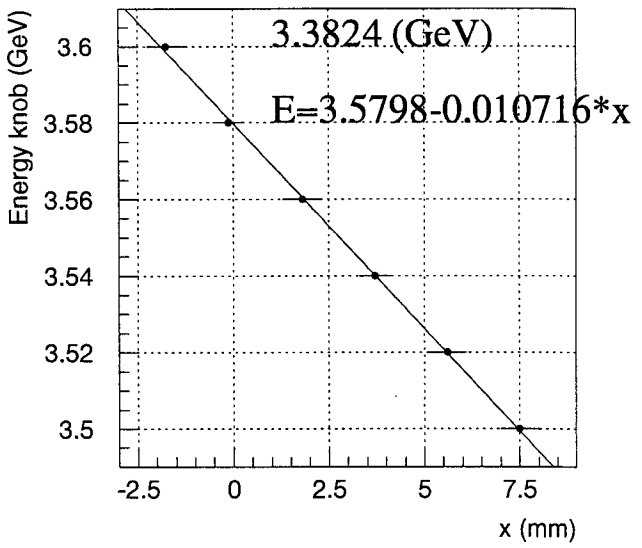
前のデータをもとにして、Matching 後に測定。

(±1mm)

(fin) 11dec2002 test2/MG-2
〃 SP-2

(BPM data) (13/12/2002 15:13)





2002.12.16 Energy Knob の calibration 測定

AR入射前に BM_61_A1 初期化を[行]っておいた その状態で AR入射調整するため

15:30 e⁻ 3.5 GeV パラメータをセットする

但しBTデータは A~4 sector selective load (5-sector は はずさないと ECSセット されてしまう 5-sector 以降は ECS以外を手でセットする

- BT data 2440. all
  - SAVE → data 2452. all e⁻ 3.5 GeV ECS study BM normal polarity (KEKB) ECS-BM のみ は通常のKEKB状態
- RF-phase data 895. phase. all
- Acc-mode data 200 mode. all

15:50 Beam ON 5-sector End までビームが出ていることを確認

AR入射のため中断

16:34 再度パラメータセットして Beam ON

energy get Hop

☆ KLY 1.6 が現在使えないが、古い accdata によれば 12.10 時点で加速エネルギー = 159.7 MeV であったので、これを差し引く。

BM_61_1 −366.300A → 8.0048 → 1.41604 ↓

−155.449A ← 3.5 ← 0.6195175

BM_61_1 = −366 → −200 → −180 → 160 → −150.061 A ↕ 3.3824 GeV

このとき knob = 3.600 で beam ほぼまん中

Dispersion = 0.331 m @ 61h

Energy Spread 調整 SB_A,B. SB_C.1.2.3.4. SB_1. QM 5,8,4

Offset @ 61h1 = 1.9 mm

I(BM_61_1)	E(BM_61_1)	knob	x@61h1	q@61h1
150.61	3.3824	3.600	−1.75 ± 0.5	0.584
		3.580	−0.12 ± 0.4	0.592
		3.560	1.80 ± 0.5	0.587
		3.540	3.70 ± 0.4	0.592
		3.520	5.60 ± 0.5	0.585
		3.500	7.50 ± 0.5	0.572
146.032	3.2931	3.600	−9.5 ± 0.5	0.577

simple correlation plot で測定 cor. 20021216_1801-kpp
傾き = −92.83 ± 0.84 mm/GeV

↓

0. 40秒待ち → 450 A. (上っていかず) 40秒待ち → 154.945 = 3.4908 GeV

(−0.100A)
BS_61_1 が かかっていたので Offにする

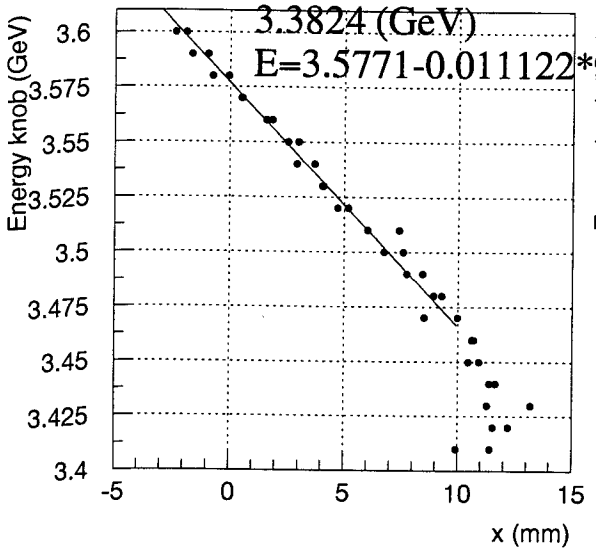
I (BM_61_1)	E (BM_61_1)	knob	x	y
154.945	3.4908	3.600	+8.9 ±0.5	0.580

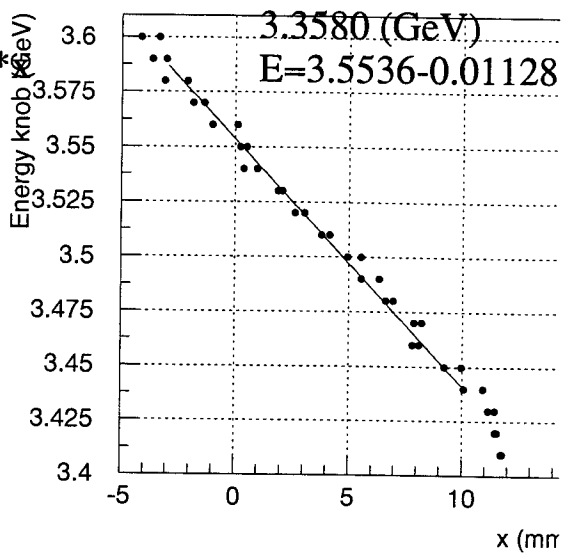
~~154.945~~ 150.061	~~3.4908~~ 3.3824	3.45〜3.60	SAVE	1848
148.962	3.3580	〃	SAVE	1853
147.985	3.3364	〃	SAVE	1858
147.009	3.3148	〃	SAVE	1902

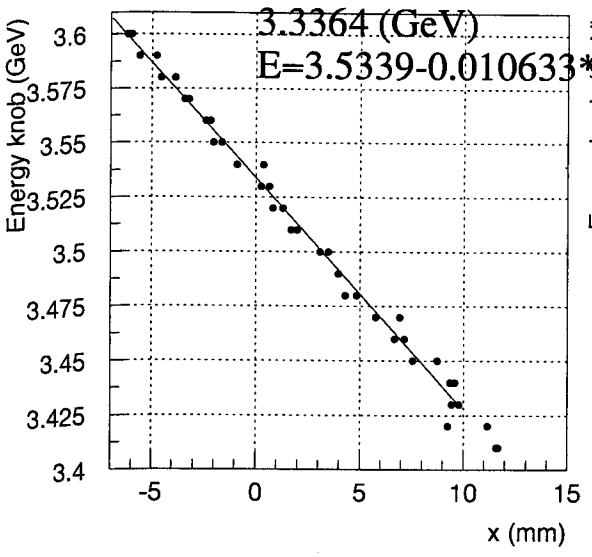
└→ 0A (40秒待) → 450A (40秒待) → 366.300 A

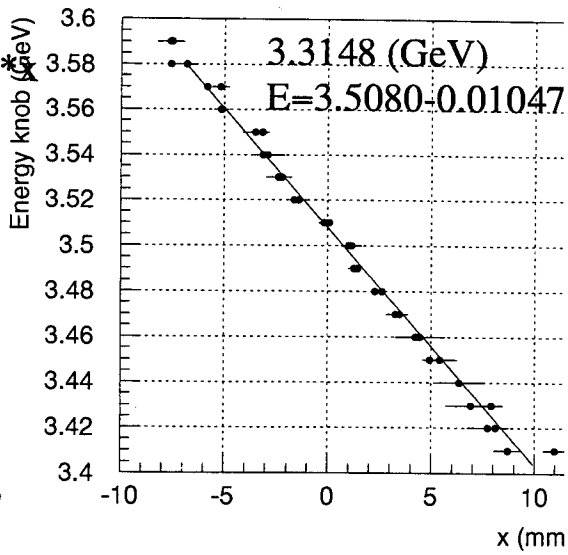
?なぜ3.5GeVでE-4は61hでのカレント低いのか?

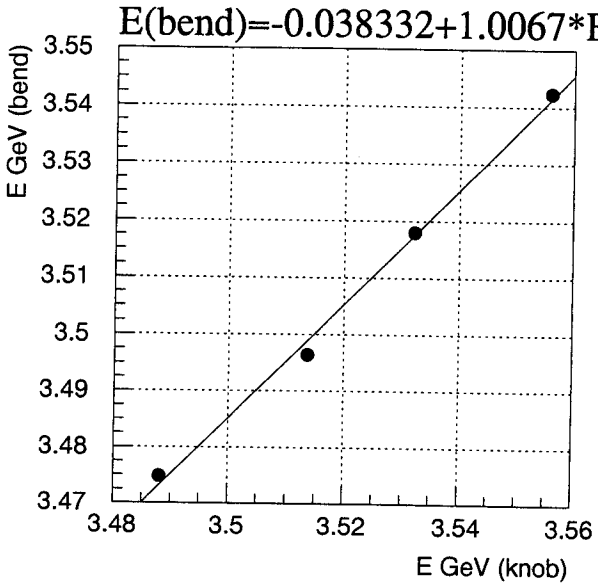
Q@584 = 0.85
Q@61h = 0.58
なぜ低い?


3.3824 (GeV)
E=3.5771-0.011122*
Energy knob (GeV)
x (mm)


3.3580 (GeV)
E=3.5536-0.01128
Energy knob (GeV)
x (mm


3.3364 (GeV)
E=3.5339-0.010633*
Energy knob (GeV)
x (mm)


3.3148 (GeV)
E=3.5080-0.01047
Energy knob (GeV)
x (mm


E(bend)=-0.038332+1.0067*E(knob)
E GeV (bend)
E GeV (knob)

2002.12.16

Channeling用 Beam調整

19:23

① Gun パラメータ (0.2nC用) "020901-0.2nC" パラメータファイルをロード

⓪ まずKEKB e⁻用パラメータをセット

② BPMの ~~オトロの~~ Range を拡大 ~~(判読不能)~~ (入らないとビームカレントほとんどゼロのように見えてしまう。ノイズに埋もれて)

③ Energy spread 調整 @ J-arc. @ 61h1

④ SC_61_h1 での Position 調整 Offset = 1.9 → 0.0 SC61h1 でまん中を通るように
Energy Feed Back で合わせさせる.

⑤ 6LA1 調整

	BS_61_A1	−0.842 → 0.0A	
	BX_61_H1	−7.504 → 0.0A	
SC_61_A1	BM_61_A1	0 → 189.158A (ECE mode)	SC_61_A1 でまん中.

⑥ SC_61_A2 で Energy Spread 調整 & Energy 経験値.

⑦ SC_61_A3 で まん中にくるよう BS_61_A2 0 → −5.0A

⑧ SC_61_A3 で spot しぼりつつ. achromatic にする Ene FB 山峡2 knobで振る

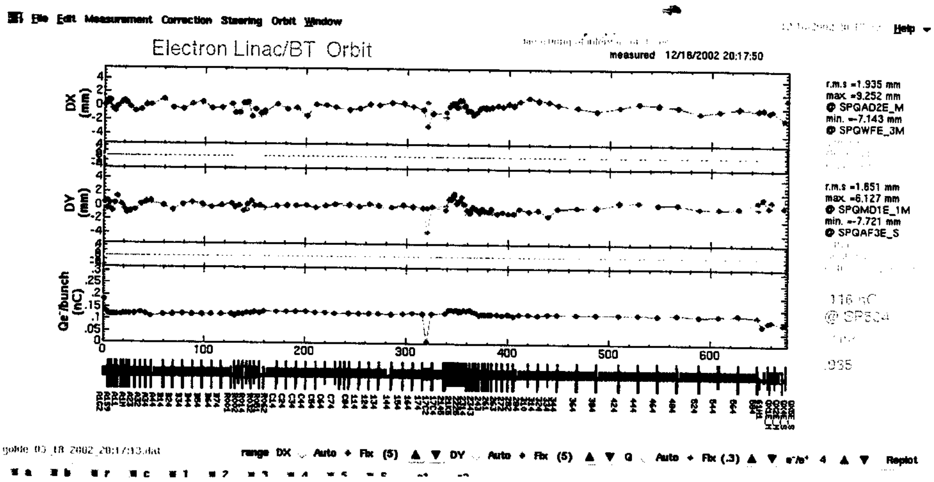
QD_61_A1	0. →	8.590 →	~~8~~7.991 →	7.000
QF "	0. →	8.923 →	~~8.821~~ 8.778 →	7.949

knob = 8.0046
8.05
7.95 > 8.0203

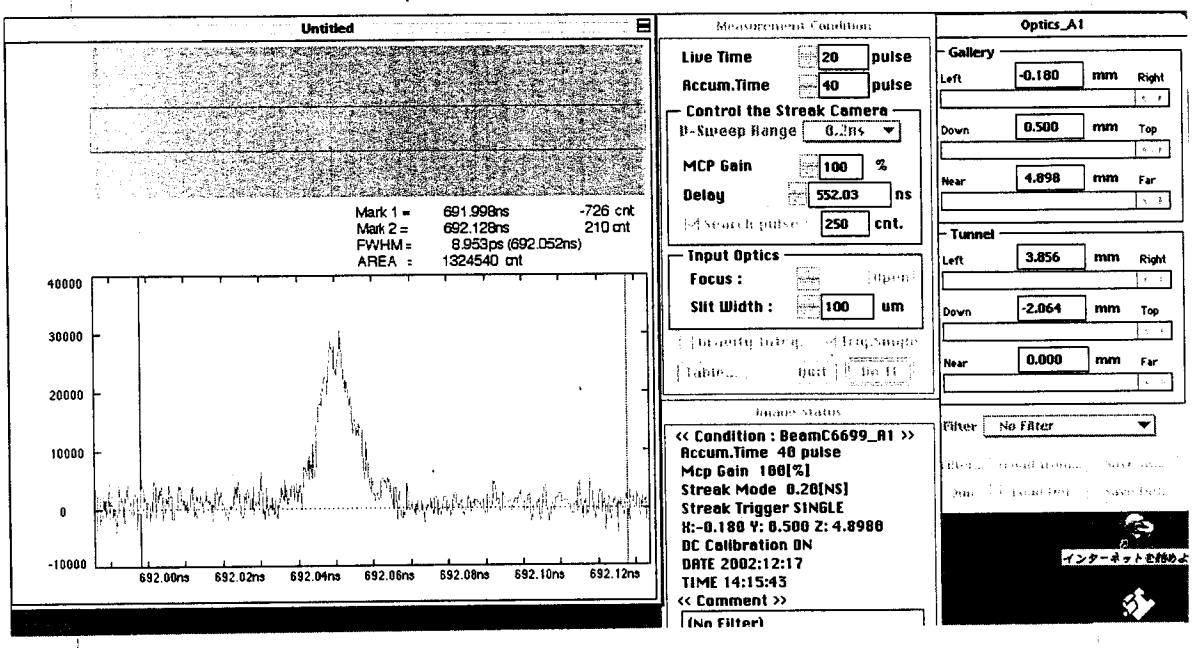
↓
achromatic ではある
beam size が最小ではないかもしれない。
↓
微調整は明日. 実験前にやる。

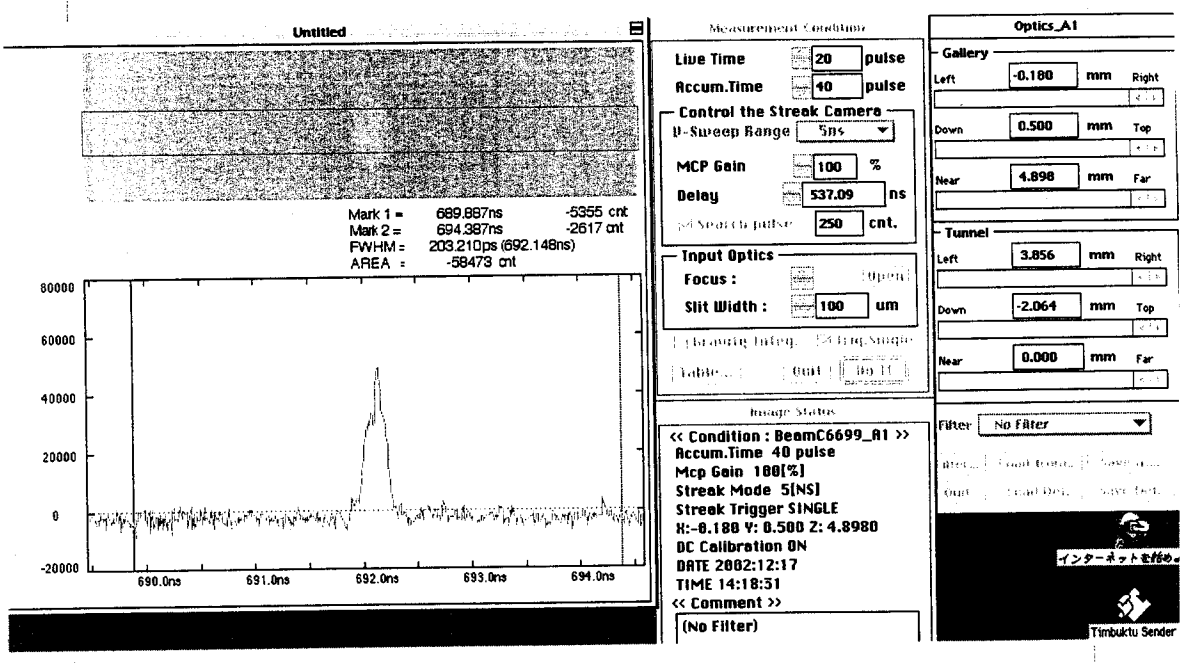
20:16

bt parameter → data 2453.all "channeling Exp 20021216"
rf phase → data 902.phase.all
acc mode → data 202.mode.all



2002.12.17 Channeling 用 Beam





ストリークカメラで映像確認できる様になったため Tunnel 側の
ミラー調整実施.