

2006
4/10

多心二子 Study 吉田 (草野)

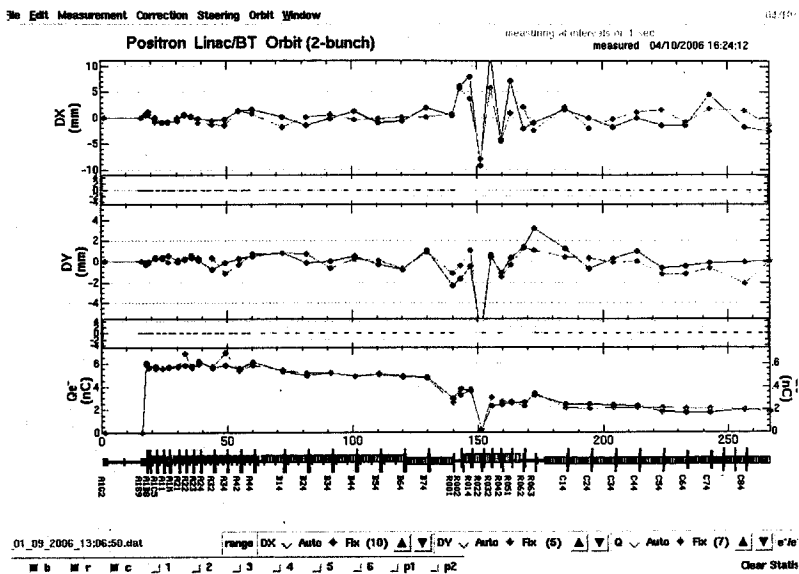
早朝の12X-7-からGETEの
調整が上り行かなくなったため

15:00 4/9の
1.2 GeV a parameter を load した

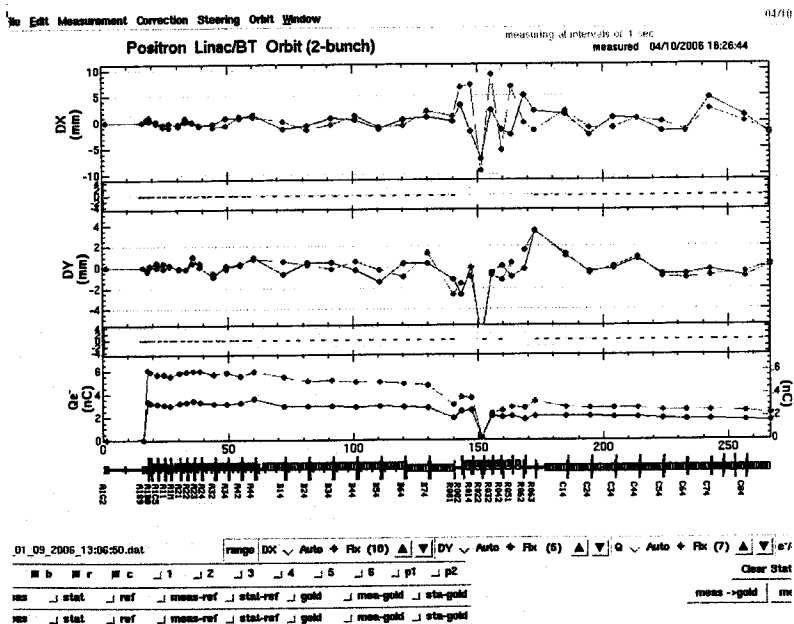
- ARC を 1.0 GeV に
 - 全体の Q を 1.0/1.2 倍
 - OVERALL を -200NS
 -
- B5 B6 Standby



1.2 bunch

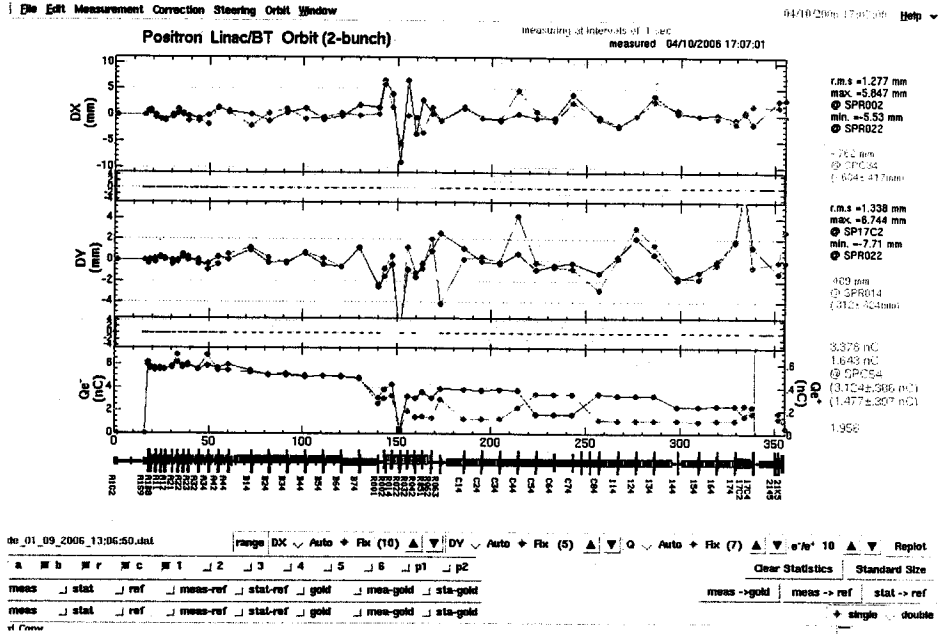


2.3 bunch

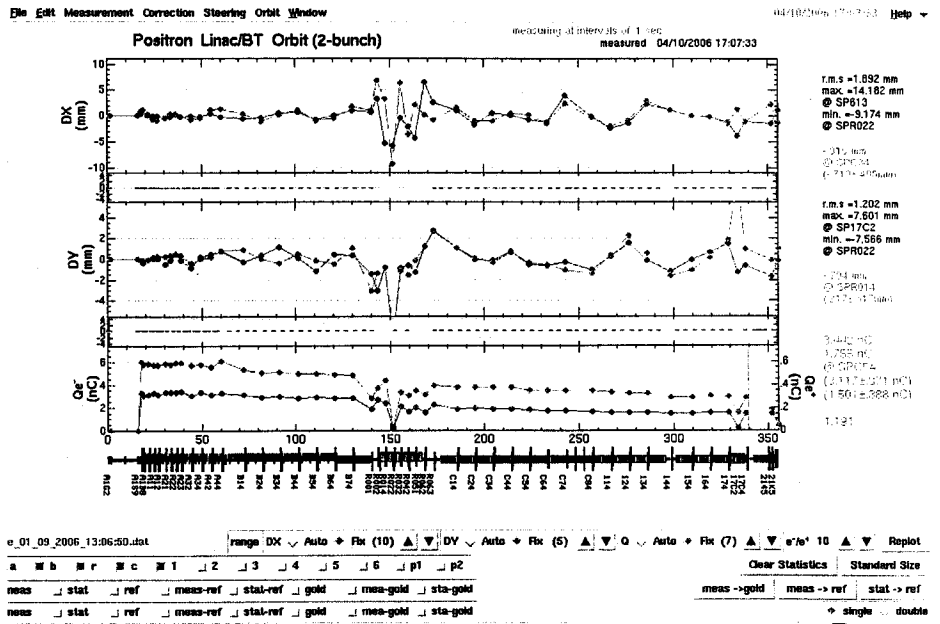


SB on phase $\epsilon - 3.5^\circ$ 2- 1.2 bunch $\epsilon \approx \frac{1}{2}$

1.2 bunch



2.3 bunch



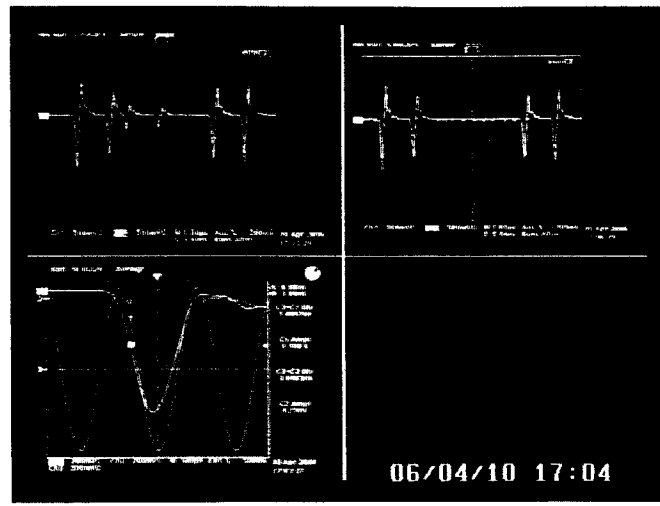
~~MONCA~~ CA

MONCA

MONCB

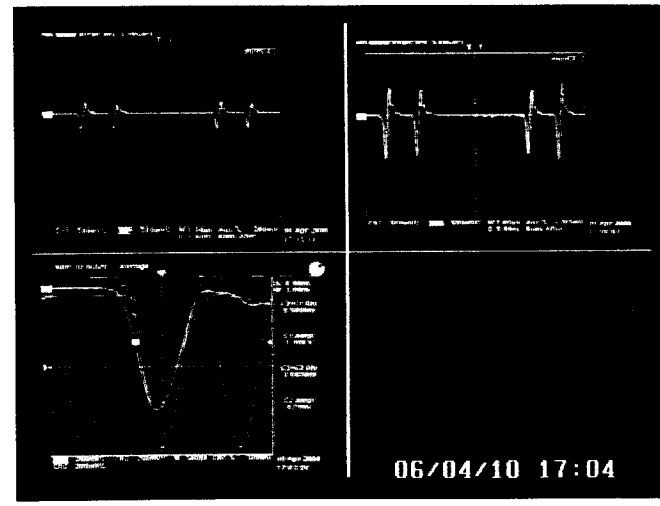


2-bunch



BPMA
→ 問題か?

1-bunch



↑
1-bunch a MONCA か 2-bunch か?

2006.4.27

C-band 4-4 unit E-4 加速試験

加速管位相関係修正後のエネルギーゲイン測定

- ① KEKB e⁻モード 8GeV E-4 Inc 5Hz
- ② SC-61-h z E-4 スポット確認 (E調整)
- ③ 各種 Feedback Off
- ④ BPM 5 times Average Mode に変更 spwmMode
spwm/DG535 Delay selector
- ⑤ SP-61-h1 z Position = 0 に対応に Energy-knob. (今は KL-44 は STB 対応)
- ⑥ KL-44 STB → ACC
- ⑦ 吉田軌道補正 z 連続的に orbit を調整 (5秒間隔)
- ⑧ Simple Correlation Plot z timing/phase/依存性を戻す (他 E-4 毎 20秒間隔 20秒毎 に対応)
- ⑨ Timing 変更は "KL-44" への overall timing 切り替えを要する。
- ⑩ 計算式
 - (1) $E \text{ gain} = (\text{Beam Energy}) \times \frac{(\text{測定したRF電圧の Amplitude}) [\text{mm}]}{307.5 [\text{mm}]}$
→ これは SP-61-h1 z の dispersion 値.
 - (2) $\text{Field grad} = \frac{E \text{ gain}}{0.96225 [\text{m}] \times (\text{Acc本数})}$ → 現在は 4 本有り.
→ これは C-band 加速管の 有効加速長 (55cm 分と想定)
- ⑪ 測定する 127- の点 (10, 20, 30, 40 MW + max Power)

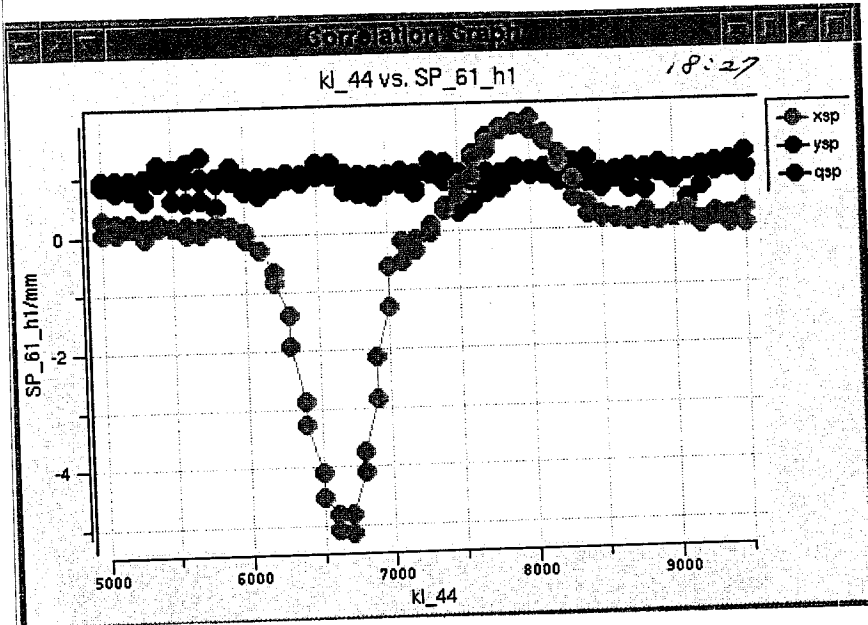
Energy knob 7.8845 → 7.9784 (Read-out)

spdata -6 -f1 3.4mm → -0.04 ~ 0.01

KL44 361.2° → 61.2° エネルギー高い状態へ (スクリーン左)

Trig 6700 → ~~6615~~ 6614

Es = 45.5 kV

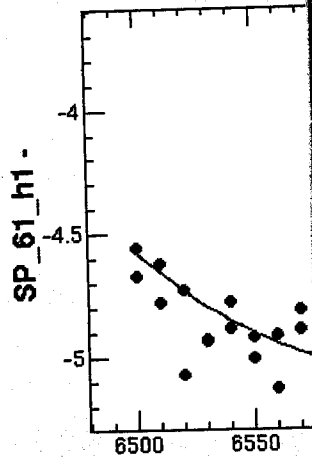


Trigger Delay

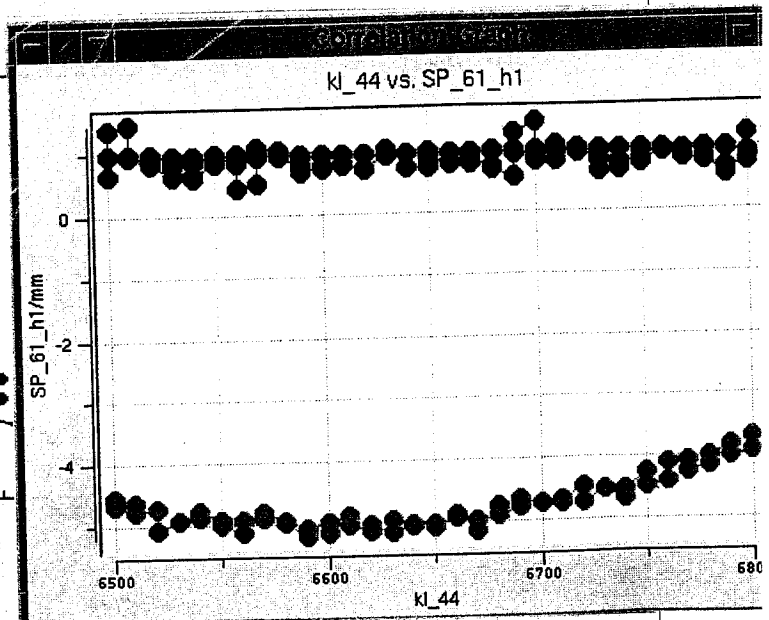
File Edit Window

04/27/2006 18:36:45 Help

ChiSquare = .74968 Goodness = .47551
 a = 3.66E-5 +/- 2.00E-6 b = 6615.01 +/- 2.89362 c = -5.0595 +/- .02052



Function = (c+(a ((x+(-b))^2)))



- $\frac{+5.4\text{mm}}{307.5\text{mm}} \times 8000\text{MeV} = \underline{141.9\text{MeV}} \quad (E_s = 45.5\text{KV})$
- $\frac{141.9}{0.96225 \times 4} = 36.9 \text{ MV/m}$

(P_f = 41.4 MW → 電圧は高
より推定行い 高)

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04/27/2006 18:50:16 H

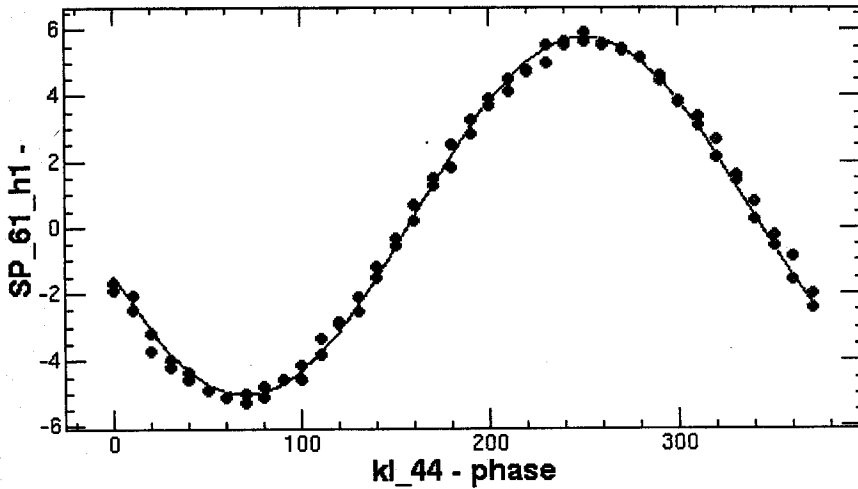
square = 4.23650 Goodness = .47799

-5.4013 +/- .03980

c = 2050.07 +/- .40944

d = .36057 +/- .02771

140.9 MeV comple
143.7 MeV comple
2% 推定



ction = (d+(a Cos[(-.0174532925 (-180+x+(-c))])))

V_sX-5 には P_s 値
41.8 ~ 42.3 MW
≒ 42 MW 程度

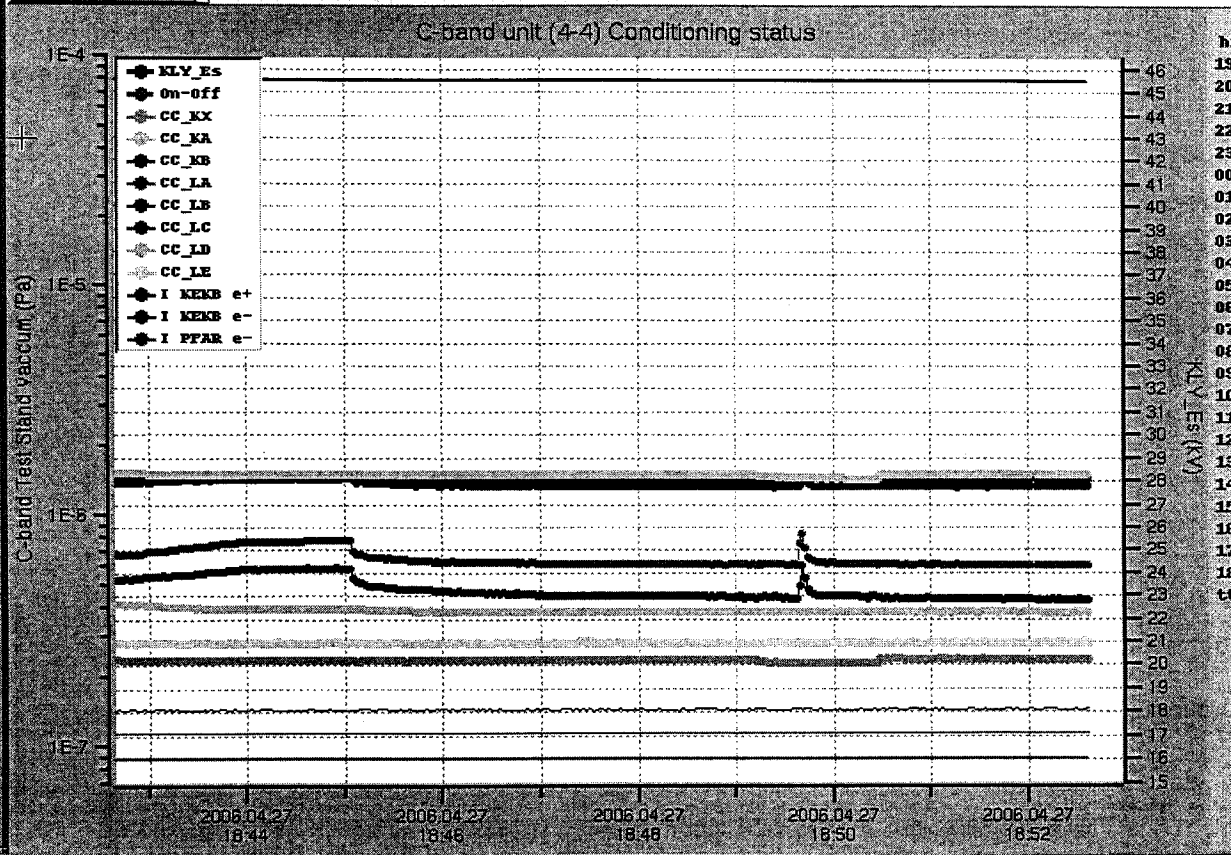
141.9 MeV comple
144.8 MeV " 2%

trig get kl-44 6614 ns
 kl-44-phase 175/ns
 kl-44-delay 3300 ns
 kl-44-width 2225 ns → 2275 → 2325 ns
 kl-44-sb 28 ns

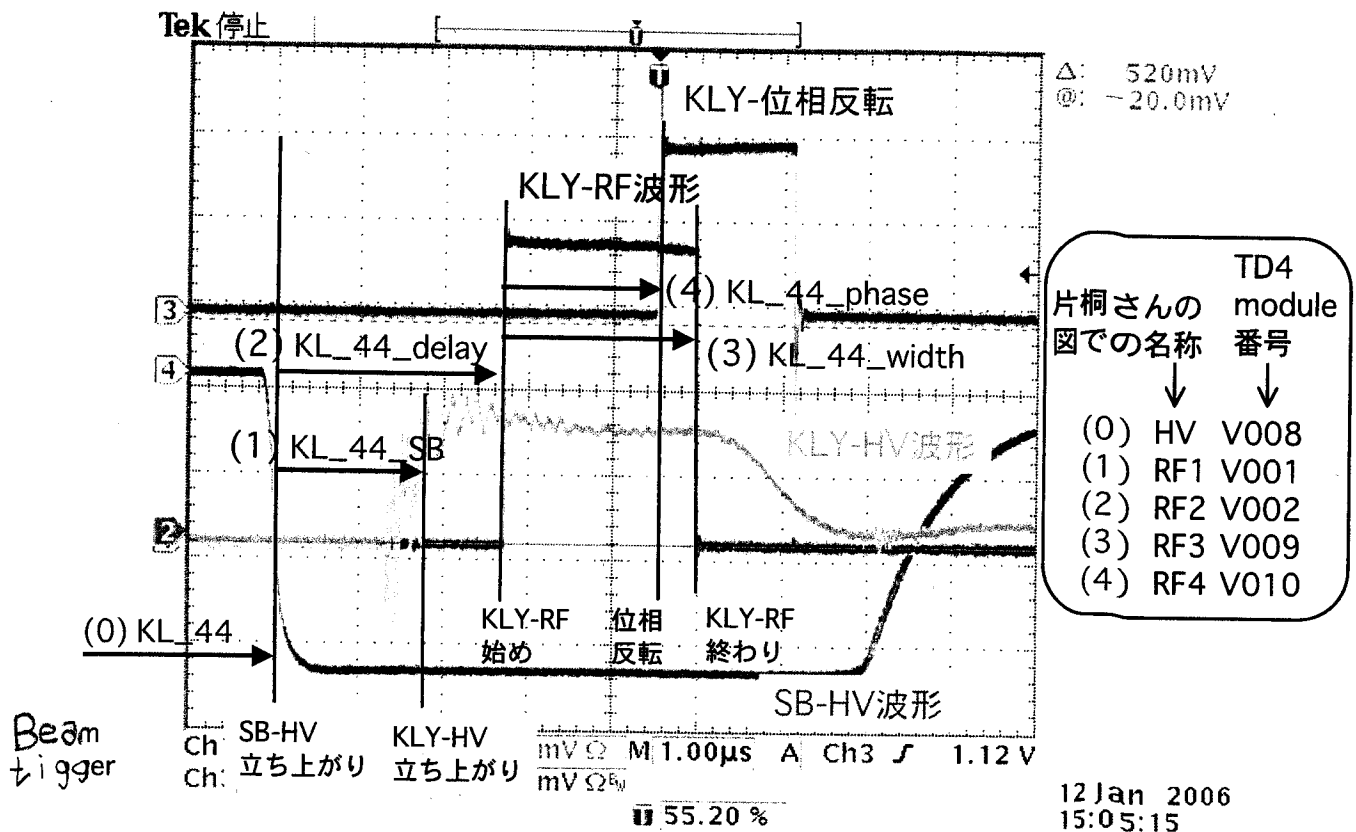
2006.04.27-18:52:37 Taking data !! PlotSpan: 10mins 1hour 8hours 1day

Es: 45.500 Power: 45.0 Pf: 41.4 Pb: 0.0 VSWR: 1.00 FCS: Normal Es-max: 45.500

LV: <input type="checkbox"/> OK <input type="checkbox"/> ON	Auto-Es-Up	OFF	J IP_KX	7.48e-07	cc_KX	2.36e-07	Recent Trips
HV: <input type="checkbox"/> OK <input type="checkbox"/> ON	Auto-RF-ON	ON	J IP_KA	1.84e-06	cc_KA	1.51e-06	04/27-06:43 VSWR= 1.75 :Pf= 0.0 :Pb= 0.0
TG: <input type="checkbox"/> OK <input type="checkbox"/> ON	FailCount	1032	J IP_KB	1.38e-06	cc_KB	1.33e-06	04/27-08:14 VSWR= 1.88 :Pf=40.9 :Pb= 4.8
RF: <input type="checkbox"/> OK <input type="checkbox"/> ON	HaltTime(sec)	11194	J IP_LA	9.39e-07	cc_LA	6.05e-07	04/27-09:06 Dischg1 @Es=45.500
Beam Status			J IP_LB	2.04e-06	cc_LB	1.44e-06	04/27-15:13 VSWR= 1.80 :Pf=35.2 :Pb= 3.4
KEKB e- <input type="checkbox"/> ON(A)	KeepTime(min)	1032	J IP_LC	5.65e-07	cc_LC	4.26e-07	04/27-15:16 VSWR= 1.80 :Pf=35.7 :Pb= 3.4
0.984 0.018 nC	StepUp(sec)	39153	J IP_LD	4.21e-07	cc_LD	3.75e-07	04/27-17:38 IFLN @Es=45.500
	-dV(volt)	1032	J IP_LE	3.93e-07	cc_LE	2.77e-07	04/27-17:41 VSWR= 1.92 :Pf= 0.0 :Pb= 0.0
	Goal-Es(kV)	40153					04/27-17:56 VSWR= 1.86 :Pf=41.4 :Pb= 4.8
							04/27-18:39 VSWR= 1.92 :Pf= 0.0 :Pb= 0.0



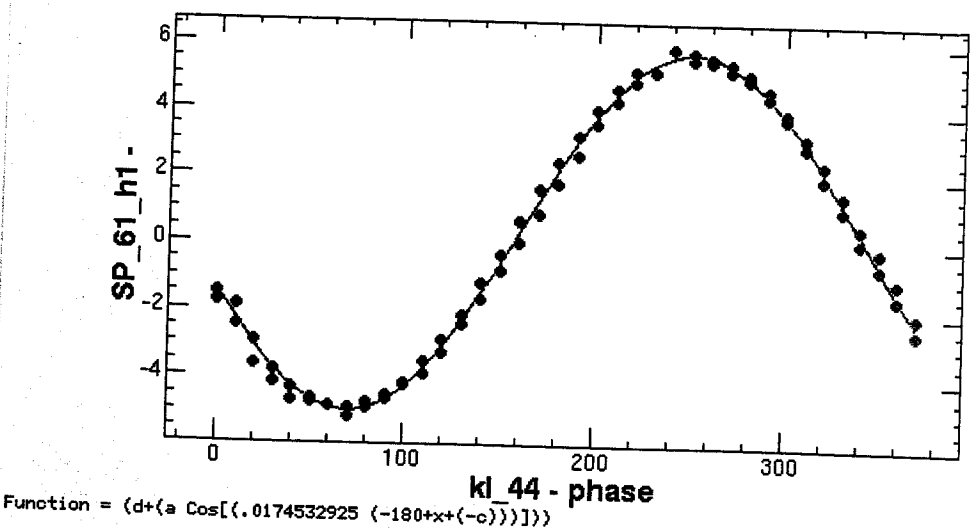
4-4ユニットRF系タイミングパラメータ



KL-44 6614
kl_44_width = 2275 ns

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ChiSquare = 3.62792 Goodness = .47768
a = -5.3613 +/- .03838 c = 2050.09 +/- .38855 d = .37702 +/- .02642



kl_44 6614ns
 kl_44-width 2325ns

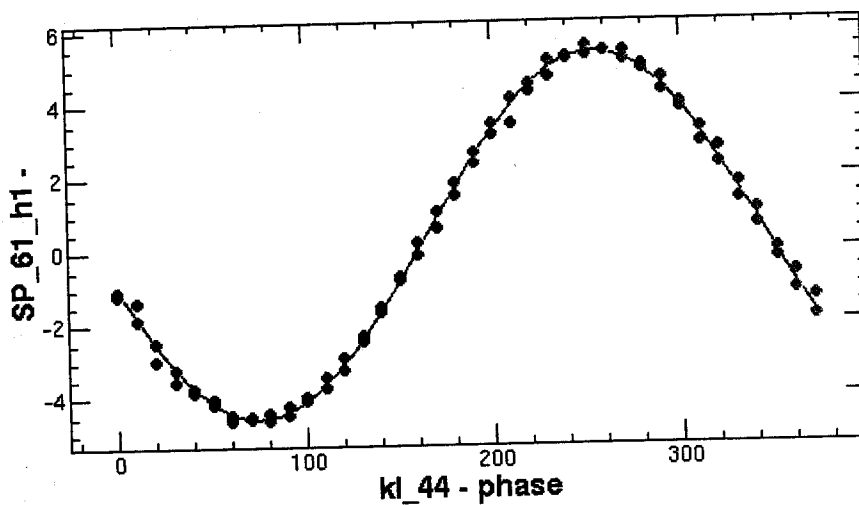
Data fit

kl_44 6514ns
 kl_44-width 2325

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04/27/2006 20:01:24

ChiSquare = 2.48024 Goodness = .47799
 a = 4.97429 +/- .03053 c = 794.358 +/- .33886 d = .38553 +/- .0212



Function = (d+(a Cos[({.0174532925 (-180+x+(-c))})])

k1-c4 6714 ns

k1-44-ndt 325 ns

File Edit Window

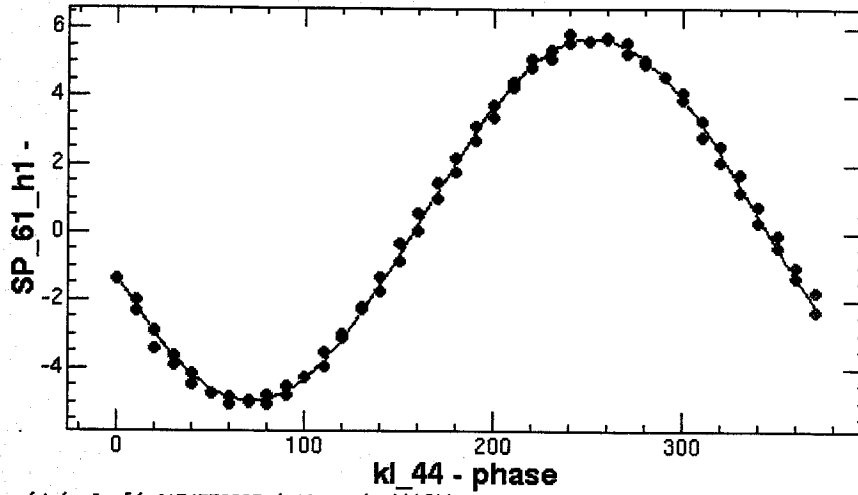
04/27/2006 19:28:04 Help

ChiSquare = 2.80806 Goodness = .47799

a = -5.3542 +/- .03243

c = -15228. +/- .33563

d = .37795 +/- .02256



Function = (d+(a Cos[(.0174532925 (-180+x+(-c))])))

File Edit Window

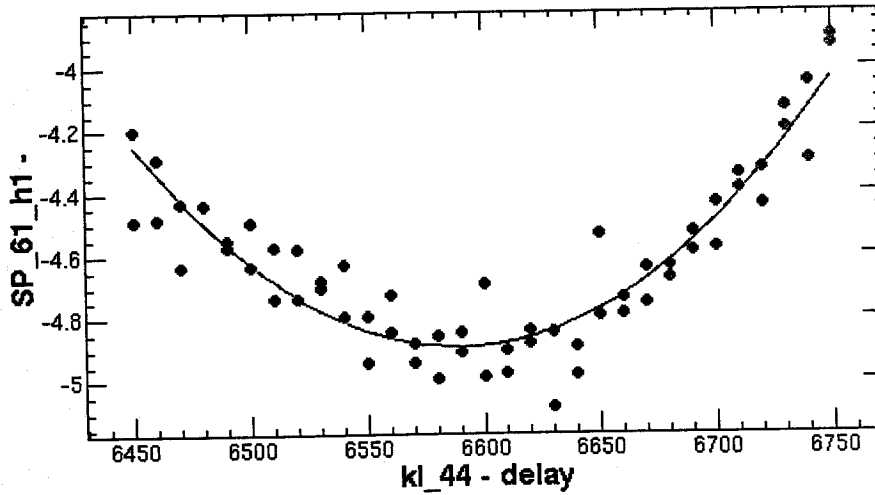
04/27/2006 19:52:20 Help

ChiSquare = .62112 Goodness = .47551

a = 3.32E-5 +/- 1.82E-6

b = 6589.26 +/- 2.27307

c = -4.8907 +/- .01947



Function = (c+(a ((x+(-b))^2)))