

25 / Mar / 2002

- 9:30 内真空用のNIGT フォウレット死亡してた(両方)
- 9:35 ~ NIGT 取り替え作業 → 見た目片方は切れておいた。
- 9:40 purification line のTMP が止まっているのに気づいた
→ TMP ON
- 5分おきに測定 purification line vacuum 6.1×10^{-2} Pa
(15/Mar 2.2×10^{-5} Pa)
- LICON LEVEL #2 69 → こっちを最初に使用
#3 75
- 10:14 inner vessel vacuum 2.4×10^{-2} Pa
(15/Mar 3.4×10^{-2})
- outer vessel vacuum 1.3×10^{-3} Pa
(15/Mar 2.7×10^{-3})
- purification line のTMP は何度 restart しても
"low vacuum" failure となる。
そして RP が "42" 引いていいる状態。
- 10:40 purification line vacuum 5.7×10^{-2} Pa
- flow meter reset 1244874 → 0
- 11:10 purification line vacuum 5.5×10^{-2} Pa
- 11:50 getter → heater ON
- 13:15 inner vessel に 2atm Xe(gas) 移動開始。
- 14:30 移動終了。 flow meter 0 → 11482
- precooling start (lig N₂ のみで)
- 全 valve closed (レギュレーターの設定はそのまま)
- 17:30 pressure, temperature をともに順調に下がってる。 0°C くらいまで

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14:20 Liquefaction start (LICON #3)

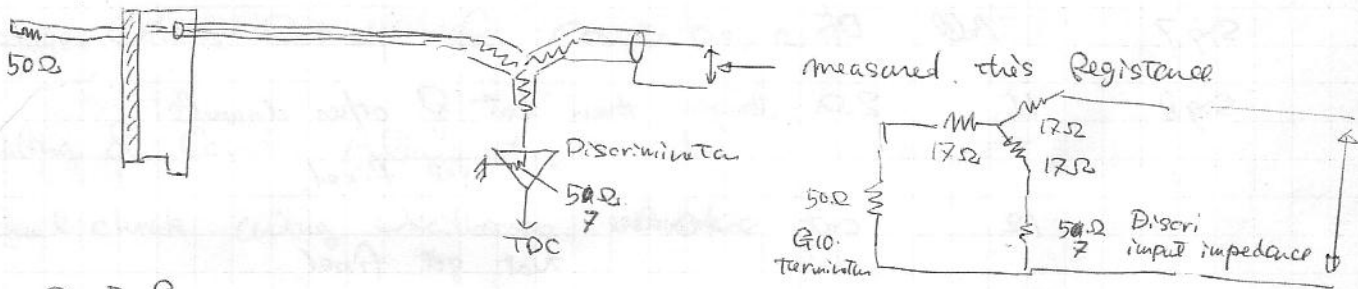
22:40 DATA LOGGER の set up で level meter の upper & lower が逆になってるけど、今さす 結線し直すとかやりにくくなるのでそのままにする
ふつ 今回の実験では level meter の upper & lower は常に逆に表示され続ける。

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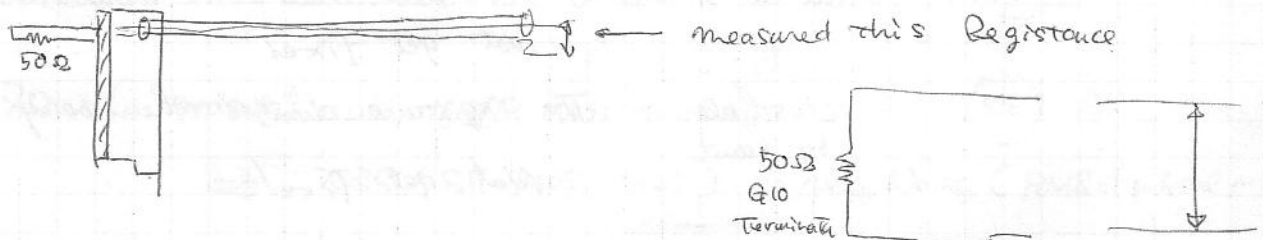
17:55 Fix up noisy signal cables.

Cables between the chamber and the electronics Rack were checked. Check was done by putting a 50Ω Terminator at the G10 connectors and measuring the Resistance at the patch panel for the delay cables.

For Sig 1-4



For Sig 5-8



Results

- Sig 1 9. No difference between putting and removing the 50Ω Terminator. Always 91Ω.
 - ⇒ Lemo Connector of the signal cable at the divider screwed tightly OK fixed
- Sig 2 19. Over Range when measuring without the 50Ω Terminator.
 - ⇒ Cable between the divider and the discrim changed to new one OK fixed
- 32. Slightly higher Resistance (by 1.5Ω) with and without the 50Ω Terminator
 - ⇒ LEMO Connector of the cable between the divider and patch panel was screwed tightly OK fixed

- Sig 3 2 Same as Sig 2-32. The Lemo connector was screwed tightly. OK. Fixed.
- 9 2.5 k Ω in case of no termination. 64 Ω when the terminator connected
 \rightarrow The Lemo connector was screwed tightly. OK. Fixed
- (24) Unstable when the B10 connector is touched by hand.
 Not get fixed.
- Sig 4 All OK.
- Sig 5 (2) Unstable when the B10 connector is touched by hand.
 Not get fixed.
- (26) "
- Sig 6 All OK
- Sig 7 All OK
- Sig 8 (11) 2 Ω larger than that of other channels
 Not get fixed.
- 12 cut somewhere
 Not get fixed.
- (17) 60 Ω , higher resistance than other channels
 Not get fixed.
- (32) Unstable. The resistance changes when being touched by hand
 Not get fixed.

In Summary.

Sig 3-24, Sig 5-2, Sig 5-26, Sig 8-32

These channels show unstable Resistance, probably due to unstable connection at the B10 connectors.

Sig 8-17

Higher Resistance (60 Ω) than other channels

Probably due to the bundy pin connection ~~of~~ or the B10 soldering

Sig 8-11

Higher Resistance by 2 Ω than other channels nominal value. But this is rather minor.

Sig 8-12 Cut somewhere ...

Ostable Registor.

Sig 3 - 24 R17 found to be OK 16/April by SM.
 Sig 5 - 2 No connection ← Not fixed since No PMT is connected
 Sig 5 - 26 F18
 Sig 8 - 32 BK 4 fixed 12/April by SM, ground clings bypassed

Higher Registor

Sig 8 - 17 BK 8 ~~fixed~~ 12/April by SM
 looks OK now, maybe bad contact of the
 (common) checking register last time
 Sig 8 - 11 BK 26 looks OK now 12/April by SM

Cut somewhere

Sig 8 - 12 BK 1 Re-soldered. OK. 12/April

The other channels are fine now 29/Mar/02 18:32

30/Mar.

Trigger Counter Set up for Cosmic ray run.

- (Cabling & Counter Alignment ⇒ OK.
- Signal check using Oscilloscope. ⇒ OK.

Pedestal run. for "Counter test & check the ADC."

#2270. (pedestal run, 6269 chnts. taken)

⇒ T35 (S11-M05, c160). is very Noisy (RMS of pedestal ~ 100 ch).

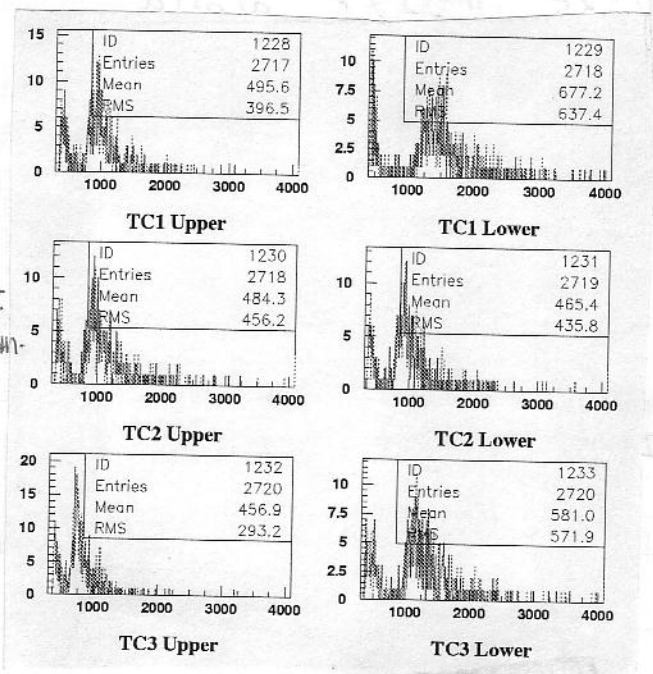
#2271. (Test run)

17:05 liquefaction finished
 flow 1338897

HT set Value.

- TC1 (Up → -2000 V
Down → -1600 V)
- TC2 (Up → -1800 V
Down → -1800 V)
- TC3 (Up → -2070 V
Down → -1850 V)

ADC spectrum.



Same as before @ TELAS.

18:36. Trigger Counter Set Up is completed!

19:20 HV applied to PMT.

T5, BK25 : zero current

BK26 : over current \Rightarrow should be switched off

\hookrightarrow HV num 198.

\rightarrow restored!

HV data : ~~xxxx~~ online / hVdata - 30 - Mar - 2002

cosmic: LXe - 1E6 - after - HV Match - recov. hv
 alpha: LXe - 1E6 - alpha. hv.

HV = 0 for HV num 198 (BK26)

19:47 #2274 pedestal for test \rightarrow #2379

20:06 HV data for alpha (see above) loaded.

20:10 #2275 pedestal for alpha run \rightarrow #2380

#2276 LED 1 & 5 10,000 events/step. HV set = 446, --- 50
 \hookrightarrow #2381 \rightarrow failure due to event limit 10,000

#2277 same as #2276

\hookrightarrow #2382 \hookrightarrow FAL aborted when this run stopped
 as usual

20:30 HV error @ BT9 \Rightarrow fixed by enabling HV ch for BT9

20:25 #2278 alpha

\hookrightarrow #2383

22:40 HV_{AS} of BK25, T5 have been unplugged. \Rightarrow plugged.

* HV set for α is {44, 45, 46, 47, 48}

\rightarrow #2385

22:45 #2280 pedestal

#2281 LED 1 & 5 w/ new LED HV setting

\hookrightarrow #2386

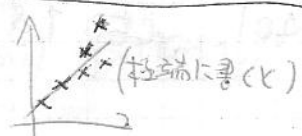
30/Mar/02

23:15 Data dir set to "c:\online\data"
and
run # counter set to 2387

23:19 #2387 a run, ~~only~~ 50000 evts.

#2281 は LED HV が太玉の特性. σ^2 vs Mean curve の3 点だけ取った。(太玉の特性)

LED の Cosmic ray run を早く済ませる。



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0:14 loaded LXe_1E6-after-HVMatch-recov.hv

recompiled ful.exe to set HV-set {46,...,50}

0:18 #2388 pedestal for cosmic ray and its LED calibration runs.

X #2389 LED 1&5 {46,...,50} **failed**

0:23 #2390 LED 1&5 {46,...,50}

0:35 #2391 LED 2&6 {46,...,50} 最初のみ全LEDでとれた。

0:47 #2392 LED 3&7 {46,...,50} LED 7 is not inverted.

0:59 #2393 LED 4&8 {46,...,50}

1:11 #2394 LED 1&5 {46,...,50} 51度とれた。

01:29 #2395 (pedestal run, 6800 evts taken).

⇒ BT32 & BT35 are noisy. (RMS of pedestal ~ 230 ch).

01:35 #2396 (Cosmic ray run @ 1e6). Start.

§

20:31 #2396 Stopped. 1183 evts

20:32 #2397 } failed
2398 }

20:33 #2399 pedestal for #2396 (5149 evts)

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rebuild fal.exe to set HV {44, ..., 48}

20:36
X #2400 pedestal for alpha. (5089 evts)

20:38
X #2401 LED 1 & 5 for alpha {44, ..., 48}

} HV & cosmic ray ~~run~~ ✗

~~#2402 pedestal for cosmic ray~~

✗ Load LXe-IEb-alpha.hv
RETRY & run (pedestal \rightarrow $\underset{\text{LED}}{\alpha}$ run)

@ 20:52 #2402 pedestal for alpha (5229 evts)

@ 20:55 #2403 LED 1 & 5 for alpha {44, ..., 48}

* 21:06 #2404 alpha run (40,998 evts)

(Software gains are not adequate.)

online RZ is not good for monitoring

@ Load "LXe-IEb.after-HVMatch_reco.hv"

@ rebuild fal.exe to set HV series {46, ..., 50}

= HV 39 @ 11

#2404 1st pedestal run (mode=0) 212 211 210 209 208 207 206 205 204 203 202 201 200

@ Load "LXe-IEb-alpha.hv"

@ rebuild fal.exe to set HV series {44, ..., 48}

@ 21:19 #2405 alpha run (30,805 evts)

@ Load HV file for cosmic ray

@ rebuild fal.exe \rightarrow {46, ..., 50}

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21:26 #2406 pedestal for / LED calib. cosmic ray (664 evts)

21:29 #2407 LED 1&5 for cosmic ray {46. -- 50}

21:41 #2408 LED 2&6 for cosmic ray {46. -- 50}

21:52 #2409 LED 3&7 for cosmic ray {46. -- 50} LED 7 is not inverted.

22:09 #2410 LED 4&8 for cosmic ray {46. ~ 50}

22:24 #2411 pedestal for cosmic ray (#2406と比較するたがった) (5,170 evts)

22:26 #2412 LED 1&5 for cosmic ray {46. ~ 50}

22:39 #2413 pedestal for cosmic ray again

noisy ch RMS

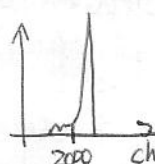
BT16 20.4 ch

T23 9.1 ch

BT32 157.0 ch

T35 152.9 ch

} => 1 evt だけ 大きい 値 が出た。 OK



} => 死んだも (これは) 21:21 かな。 OK

22:44 #2414 cosmic ray start. gain ~ 1x10^6 --- 明日の朝。電力揃ったのは。

22:48 stopped (pedestal mode で 定めた値を 確認のため stop. 2も Normal mode だった)

22:49 #2415 cosmic ray start gain ~ 1x10^6

0:26 #2415 stopped (online histo が見えなくなったので stop.)

5:10 pedestal run #3

#2415 の 途中 で file が 止まっちゃったか? 2も mid file は 存在する。

0:27 #2416 pedestal for cosmic ray (7,529 evts)

0:30 #2417 LED 1&5 for cosmic ray {46. -- 50}

BK13a check => 右赤線 77 参照

0:56 #2418 pedestal

右赤線. BK13 は 0ch 区間 記録した

=> mini CARD を 変えようか...

trace run # 2280 #3
BK13 (ADC #222) の ADC 値 の 情報 が 全く ない。 = 0ch G108-27

o BK13 の HV は 正常
o ADC 直前, busy で 信号 は 見えず。

これは CARD を 変えようか!! ...

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~1:00 BK13 (ADC#222, ADC-9.75) の mini CARD 交換

@ 1:12 #2419. ~~***~~ pedestal run. (5854 evts)
BK13 ~~***~~ recovered!!!

@ 1:15 #2420 LED 1 & 5 for cosmic ray run {46, --, 50}

@ 1:26 #2421 cosmic ray run 1e6 gain

2:15. timing counters の HV 設定値を 1.7e7 に 6pA に (see P.9)

b:20 } HV auto restart.

11:28
12:38

13:12 #2421 stopped.

o data の 移動

P.11 の data dir を変更したため、以前の data が C:\online1 以下にあったのを

C:\online1\data に移した。

- o MID
- o IDX
- o IDF
- o RZ
- o HST

runlog.txt } # oldrunlog.txt } 以下に移動した。
midas.log } oldmidas.log

o その他. 020314.log も移動。

o hogehoge.ps, noise14Mar.jpg, 020314_185045_noise14Mar.jpg も移動。

@ 13:13 #2422 pedestal for #2421 (8312 evts)

@ 13:15 #2423 LED 1 & 5 for #2421

run # 1日 2回に可

- 13:25 # 2424 Pedestal for d RUN
- 13:30 # 2425 LED 1&5 for # d RUN 40000 events/bin
- 13:43 # 2426 d run (30,290 events)

rebuild fal.exe f46, ..., 504 and load HV setting file for cosmic ray

#2427 failed

13:51 #2428 pedestal for cosmic ray run (5,298 events)

13:53 #2429 LED 1&5 for cosmic ray run

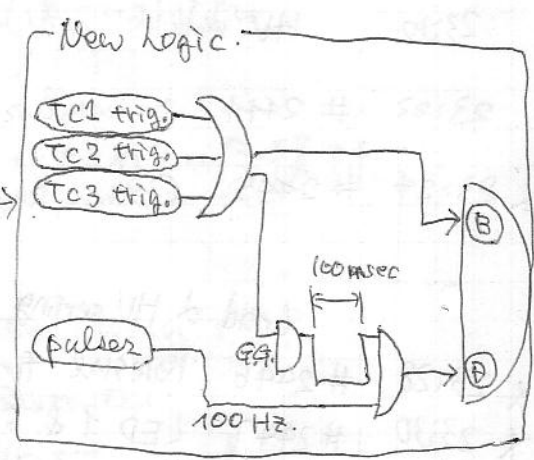
X 14:08 #2430 cosmic ray with pedestal run

S
 14:11 #2430 stopped. because.
 (ADC's of TCs are invalid.)
 ⚡ (B) HITI - 3HTKO (D) HITZITKO

#2431. Test run for New trigger logic test.

15:02 #2432. pedestal run. (563 evts. taken).

16:10. #2434. Cosmic ray run @ 1e6. with pedestal.



(B) trigger is opened by Cosmic ray event.

(D) trigger is pedestal x 10 after cosmic ray event.

⇒ If you want to take the data with pedestal,
 So select the trigger (B) U (D).

20:05. #2434 stopped because pstm¹⁵ does not work.
 (it ~~seems to be turned off~~)

pstm¹⁵ is restarted.

HV is off @ pstm¹⁵

2435 pedestal
 20:20 # 2436 LED 1&5 HV = {46, ..., 50} ⇒ invalid
 # 2436 stopped because HV error occurs in pstm¹⁴

20:35 # 2437 pedestal
 20:37 # 2438 LED 1&5 HV = {46, ..., 50}
 ⇒ stopped soon after due to the same trouble as #2436

20:50 # 2439 pedestal
 @ # 2440 LED 1&5 HV error during this run. but it was auto-restored

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21:10 #2441 pedestal

21:12 #2442 cosmic

21:25 pstmp14 is stopped. => #2442 stopped after HV error

21:30 pstmp14 restarted

21:30 #2443 same as #2442

← HV supply restart, frequency, 32 times/hour!!

23:09 #2448 stop

23:10 HV modules and PC (win2k) rebooted. to refresh system

23:22 #2444 pedestal run (6060 events, taken)

* 23:24 #2445 Cosmic ray run @ 1e6, (B trigger) => STOP.

Load & HV setting and rebuild "fal.exe"

* 23:28 #2446 Pedestal for d (5106 events)

* 23:30 #2447 LED 1 & 5 for d {44, --, 48} failed ← HV restarted.

* 23:31 #2448 failed

23:36 #2449 pedestal for d (5095 events)

23:37 #2450 LED 1 & 5 for d {44, --, 48}

23:49 #2451 d run (38,503 events)

Load normal (cosmic ray) HV setting and rebuild "fal.exe"

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0:00 #2452 pedestal for cosmic ray (6,811 events) ← comment for d runに付いた

0:02 #2453 LED 1 & 5 for cosmic ray {46, --, 50}

HVの調子が悪化。2-6, 3-7, 4-8 setは行かない。と書いておいたが HV restart ---

0:20 #2454 pedestal for cosmic ray (5,211 events) → ~~#2455 #2452 #2453 rate~~ ~~1850 counts per run.~~

0:22 #2455 cosmic ray run w/o pedestal

06200

~~0600~~ status HV error. Restart LTO (1). Connection error.

HV editor 12

- o PE not running 203 warning 717113.0
- o Measured voltage is correct value 127113.

LeCroy HV 1458 HV (下 HV)

- o 電源、ケーブルを交換した。後、module 127113

LeCroy 1454 (上 HV)

- o ~~電源、ケーブルを交換した~~。module 9 led 717113.0
- 電源、ケーブルを交換した。

odbedit 12 230 230 Connection が切れた模様。

07200 Run #2455 paused.

8200 HV is found to be off. From when???

1458 is Rebooted. & SCFE is Restarted

Run #2455 is stopped ONLY 135 events!

I tried to set up HV, but the SCFE does not start rightly. It shows the warning message "HV error".

Network connection is investigated ...

http://pstmp14.kek.jp	OK. can be connected
http://pstmp15.kek.jp	No. connection time out

⇒ 1454 is Rebooted

OK this time SCFE is started correctly.

HV edit is Restarted and LX-1E6-after-HVMatch-ver.01 is loaded

8:16. Run #2456. cosmic RAP Run w/o pedestal

(For testing the stability of the HV Power supplies, that had been rebooting automatically last night...)

Take calibration RUNs after this RUN.

This data is taken just after starting the HV POWER SUPPLY. after ~6 hours power out for the PMTs.

So possibly the gain is not stabilized, better to wait for at least 2~3 hours. Watch the HV PSs during this RUN!

18 02(April/02)

8:36 No error from the HVs during these 20 minutes

8:40 Data logger stopped, Sorry. (yoshimura)

10:34 Lower HV supply is sleeping ... \Rightarrow restart.

13:23 #2456 stopped (277 events triggered)

HV set and rebuild "fal.exe"
@ 13:25 #2457 Pedestal for α (5551 events)

@ 13:26 #2458 LED 1 & 5 for α 544, ..., 487

#2459 failed ... 同様に cosmic run の HV と fal に (2) 決ま。 α と 3 が 決まらな。

@ 13:40 #2460 α run (30,999 events)

13:47 #2461 pedestal for cosmic ray (5,216 events)

13:49 #2462 LED 1 & 5 for cosmic ray 546, ..., 507

14:00 #2463 cosmic ray run w/o pedestal (B trigger)

16:50 HV error @ ps+mp14 \Rightarrow not automatically restarted

\Rightarrow restarted manually

#2463 was paused and restarted. @ 16:57

18:55 ps+mp14 is off. \Rightarrow restart manually
(maybe from 18:10)

22:28 #2463 stopped (466 triggered)

Load HV set for α and rebuild "fal.exe" for α

22:31 #2464 pedestal ^{for} α run (6300 events)

22:32 #2465 LED 1 & 5 for α run

22:45 #2466 α run (30344 events)

#2466 の直前に HV を 545 まで cosmic ray 用に (2) 決ま。 α 用に 無し。

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Load HV set for cosmic ray and rebuild "fal.exe"

22:52 #2467 pedestal for cosmic ray (5809 events)

22:53 #2468 LED 1 & 5 for cosmic ray

23:04 #2469 cosmic ray run

}

← HV auto restart at 9:11. 1回たが~~た~~たHVは安定化して見えた。

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12:28 #24~~70~~⁶⁹ stopped (860 events)

Load HV set for α and rebuild "fal.exe"

12:30 #2470 pedestal for α (5,383 events)

12:31 #2471 LED 1 & 5 for α

12:43 #²⁴⁷² α run (29,988 events)

Load HV set for cosmic ray and rebuild "fal.exe"
(gam=1X10⁶)

12:54 #2473 pedestal for cosmic ray (5,123 events)

12:55 #2474 LED 1 & 5 for cosmic ray

13:10 #2475 cosmic ray run

13:13 #2475 stopped to start α run to see the influence

of cooling power test of the new compressor.

Load HV set for α

13:15 #2476 pedestal for α

#2477 LED 1 & 5 for α HV setting 144. -- 484

13:27 #2478 α (51656 events)

13:32 Heater in LXe on ~~10.5~~ 10.5 W

#2479 α (28491 events)

13:50 #2480 α (13626 r) No change

14:03 Heater 21.6 W

#2481 α

- 14:44 # 2482 α w/ heater 21.6W (105154)
- 15:20 # 2483 α ~~α~~ just before changing heater power
(20000 events) to 40W
- 15:25 Heater power ~~40W~~ 53.96W
2484 α started
- 15:35 Heater 46.51W
2485 α (68637 events)
- 16:55 # 2486 α just before changing heater power to 70W
(\sim 20000 events)
- 17:00 heater 46.51W \rightarrow
2487 α (35071 events)
- 17:40 # 2488 α w/ heater power 72.4W
(30682 events)
- 17:50 Heater power changed to 102.6W
- 18:37 # 2489 α w/ heater power 102.6W
(41853 events)
- 19:00 Heater power changed to 70W
- 19:55 # 2490 α w/ heater power 70W
(23433 events)
- 20:05 Heater off
- 21:50 Collected charge continues to decrease
even after switching off heater
- 21:50 # 2491 pedestal
- 21:55 # 2492 LED 1&5 flashing w/ HV setting 44A, -48V
- 22:20 # 2493 α w/o heater
(33270 events)
- 22:20 # 2494 α w/o heater (535084 events!!) -- no write data
23:58

0:10 #2495 pedestal for α (5,171 events)

0:11 #2496 LED 1 & 5 for α {44, ..., 48}

0:22 #2497 α run w/o heater (30,176 events)

run #2492~98 は α ramp 540ch \leq 511. #2497は 520ch \leq 511.
 検出元に α の 3012 確か。

runの種類	event数	HVカ-	runカ-
pedestal	5000 event \leq 511	C	0
LED	自動	C	2
α	36000 event \leq 511	A	1

~~#~~

1:02 #2498 pedestal (5,334 events)

1:08 #2499 LED 1 & 5 flashing for α HV setting {44, ..., 48}

1:25 #2500 α run w/o heater (30,623 events) 500ch \leq 511

2:05 #2501 pedestal for α (5,199 events)

2:07 #2502 LED 1 & 5 flashing for α HV setting {44, ..., 48}

49800 \leq 511 stop. α の 2 検出 1 度

X #2503 LED 1 & 5 flashing for α HV setting {44, ..., 48} \leftarrow

\hookrightarrow failed, unfortunately, mserver and mhttpd are falled down.

\Rightarrow Reboot.

2:49 #2504 pedestal for α (5,523 events)

2:51 #2505 LED 1 & 5 flashing for α HV setting {44, ..., 48}

3:06 #2506 α @ 1eb w/o heater (30,456 events) 500ch \leq 511

4:04 #2507 pedestal for α (5,429 events)

4:06 #2508 LED 1 & 5 flashing for α HV setting {44, ..., 48}

4:17 #2509 α @ 1eb w/o heater (30,470 events) 500ch \leq 511

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5:04 #2510 pedestal for α (5,387 events)

5:06 #2511 LED 1&5 flashing for α HV setting {44, ..., 48}
↳ #2511 4990 events 2-stop. ~~17~~ page ~~8~~ AB. ~~reboot~~

#2512
↳ failed \Rightarrow reboot

5:34 #2513 pedestal for α (5,324 events)

5:35 #2514 LED 1&5 flashing for α HV setting {44, ..., 48}

5:47 #2515 α @ 1e6 w/o heater (34,699 events) 500ch (5.1)

6:45 #2516 pedestal for α (5,273 events)

6:46 #2517 LED 1&5 flashing for α HV setting {44, ..., 48}
↳ failed.

6:58 #2518 LED 1&5 flashing for α HV setting {44, ..., 48}
↳ failed

7:14 #2519

↳ error: HTO error \Rightarrow HTO-10, L2 (10440) \Rightarrow OT and disabled.

and. run #2519 failed again. \Rightarrow DAG PC, rebooted.

#2526, Error again, → retry.

#2527, DAQ again, same as previous run.

Error!! Goddamn!

Probably, Gain adjustment is completed successfully

since there are no difference between New HV and Old one in the xxx.xls file, but there are certain difference ~~from~~ from 1e6 gain file.

So, we take the α run data. (??? Why memory error is occurred frequently?)

#2528, pedestal run. (~7000 events taken)

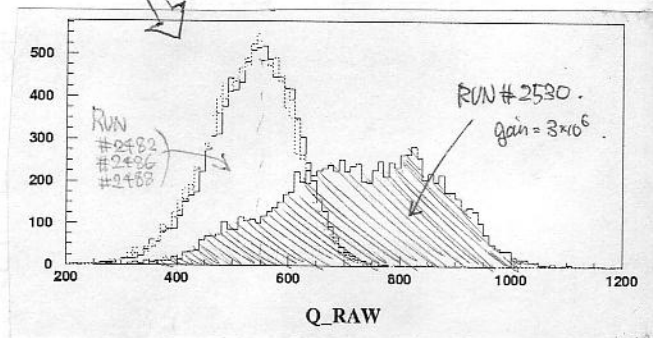
OP: #3 #2529 α rays run. @ 3e6 gain, (31602 events, taken)

OP: #8 #2530, Same as previous run. (32990 events, taken)

(The last HV table is saved as "04-04-2002-runend.hv" for reconfirmation later.)

ALL the RUN finished in this end.

10:00 Start ~~to~~ to recover the Xenon.
Refrigerator. turn off.
heater in LXe → 30V (9 Ω)



10:44 HV off for all channels.
All the DAQ system, turn off.

Why, such a broad distribution !?
HV adjustment was failed?
(Since, memory error & error ...)

10:20 fill ~~N2 gas~~ outer vessel with N2 gas (0.5 atm)

18:50 heater in LXe → 25V

21:20 heater → 20V

4/6
13:50 Xe recovery finish

fill ~~the~~ vessel with N2 (inner 1 atm, outer 0.5 atm)

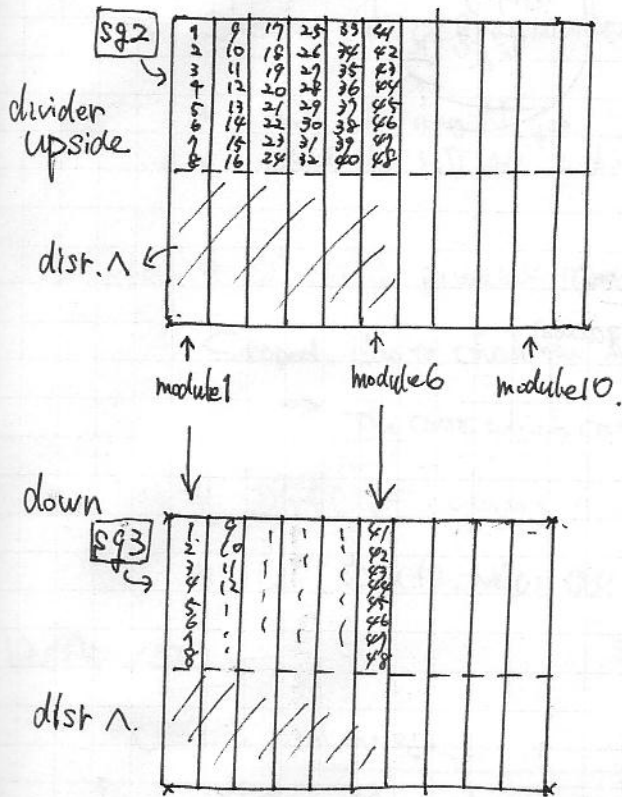
heater in vessel on @ 25V (5V = 22 °C)

10/Apr.

active

19:00 divider pin assignment (バリエーション)

左 向き 右



左図のように上のdividerのmodule1の上側の
1チャンネルから11個にバリエーション Sig2の1~48を
assignした。Sig3は下のdividerのmodule1
の上側のチャンネルから同様のassignを行った。

11/Apr

◎ Test for Active Divider

- * Pretest, using test pulse from clock generator. ⇒ Good.
- * Test run. (Sig1 and Sig2 (#01~16) are connected to New divider, Sig2 (#017~32), Sig3, Sig4 are not connected.)
- * HV set ⇒ LXe-1E6-afes-HTMLatch-reco.hv (@, hvdata-30-Mar-2022).
- * test run (#2531) : for CIAFB mini card check. (no data written).

2531. pedestal run. (4952 events.)

2532. pedestal run. (5627 events.)

2533. LED run (LED 1&5 flash, driver voltage ~~41V~~ ⁴⁶). Too high.

2534. LED (1&5, ~~41V~~ ^{43V}). (2096 events)

~~2535~~ 2535. LED (1&5. 41V) (5448 events.)

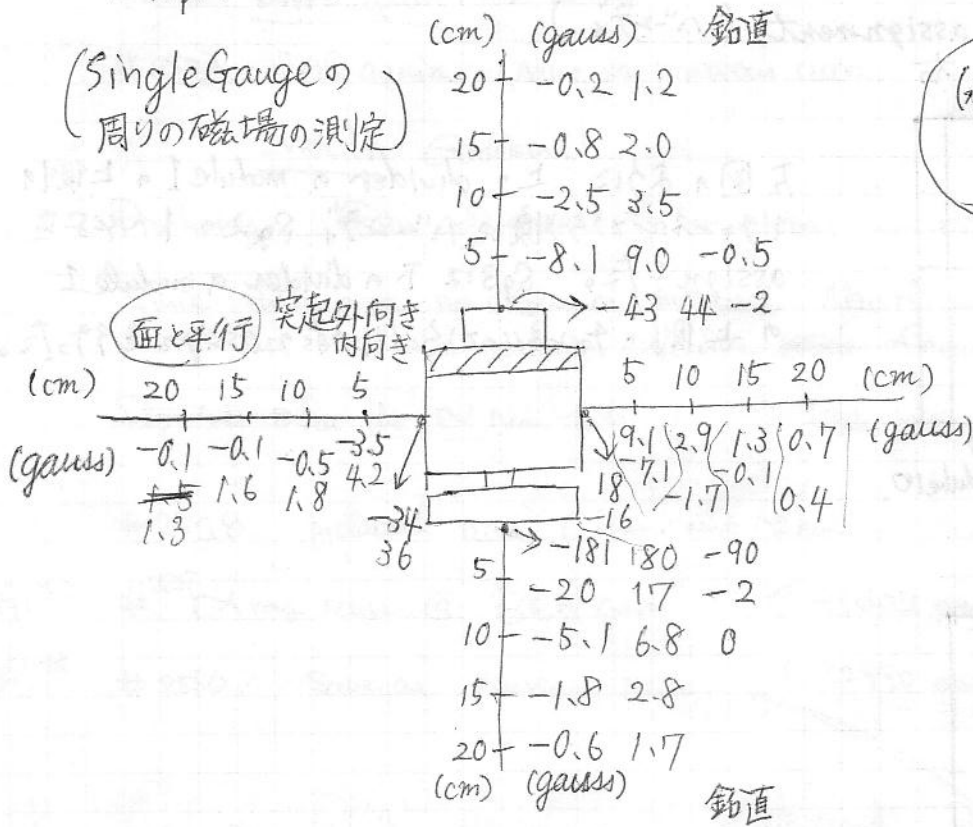
2536. LED 2&6. 41V. (6089 events.)

2537. LED 3&7. 41V. (5545 events)

2538. LED 4&8. 41V. (5421 events.)

11/Apr/2002

(Single Gaugeの周りの磁場の測定)



16(April/2002)

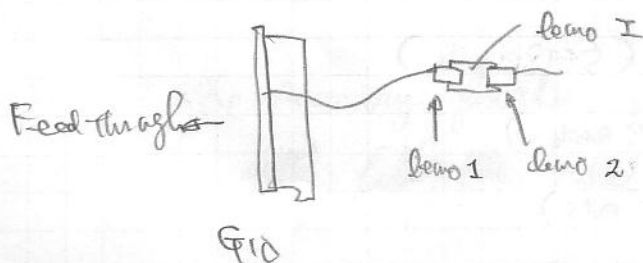
Signal Cable Fix-up

Almost all cables listed in P9 are fixed except for one unstable connection, maybe at G10, Sig 5-26-F18.

In addition, two cables are fixed.

Sig 1-9. A Lemo connection is CRAMPED at the input of the divider. → OK

Sig 2-14. This had a problem and previously fixed by inserting lemo connection near the G10 board



The Lemo 2 connection as shown in the left figure is CRAMPED Again → OK

Signal cables are fixed as shown in previous page.

⇒ Check the active dividers for all PMT channels.

- * fill the dry N_2 gas, 1.1 atm.
- * load the HV set: LHe - IEG - after - HV Match - rec. hv.

▶ RUN # 2539: pedestal run (3662 evts. taken).

Stopped. due to check the ADC modules. (: many channels returned 4096 ch!).

⇒ The cable which carry the gate signal was unplugged!! ⇒ Connect.

▶ RUN # 2540: pedestal run, again. (~10000 evts, taken).

- * L16 (Slot 12, M90, C89). is very noisy, RMS ~ 40 ch.

12/Apr./2002.

* C89. is still noisy.

- ⇒ C89 unplugged. (@ divider output connector) ⇒ Noise is rejected!
- ⇒ unplugged. (@ divider input connector) ⇒ still noisy !!

Noise (@C89) have to be occurred after active divider. (PMT and feedthrough and ~~front~~ front part cable are innocent.)

- ⇒ C88 and C89 swapped. (@ divider output connector).
- ⇒ Noisy channel was swapped. (C88: clear → Noisy!
C89: Noisy → clear!

The offender is Active divider (C88). or Bundy patch panel (3-26).

* For a while, C88 will have been unplugged @ divider out put connector.

* modified analyzer, slightly.

c:\online\adcalib.c (355)

fm-gain = $1.25E6 * a * 2$; ⇒ $1.25E6 * a$;
for (f. i-channel < 128).

▶ RUN # 2542: pedestal run, again. (2818 evts. taken).

▶ RUN # 2543: LED run. (#1 & #5 flashing, and drive voltage is 40V). (~6000 evts taken)

* All the histograms seem sharp distribution on the online booked one.

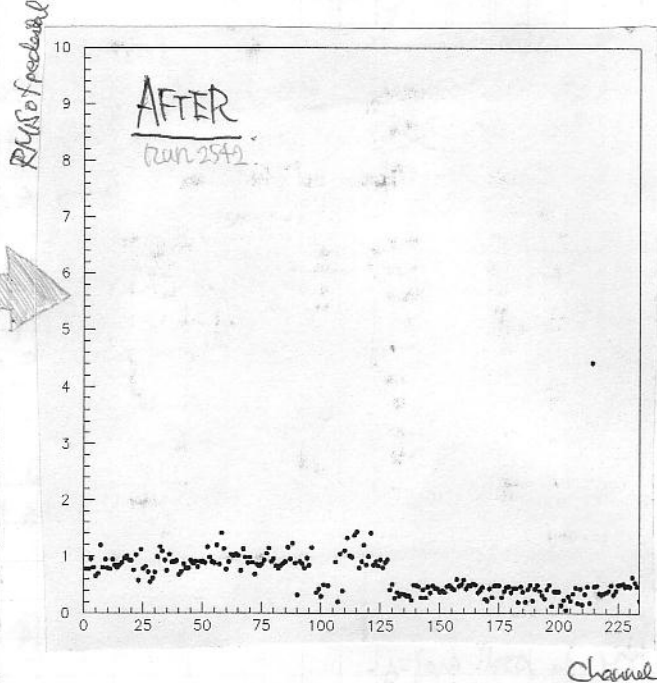
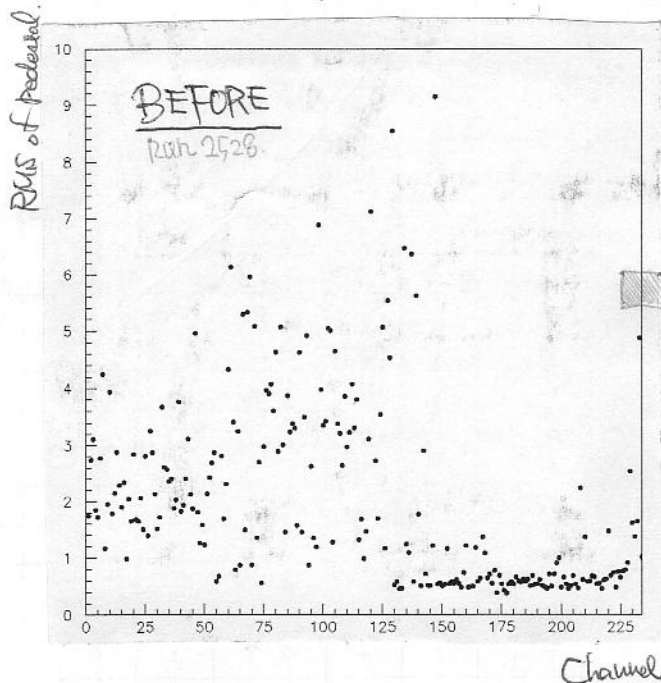
▶ RUN # 2544: Normal run with clock trigger, for the study of coherent noise.

▶ RUN # 2545: Same as previous run (booked histograms, filled by divided ADCs).

▶ RUN # 2546: Same as previous run (booked histograms, filled by ND-divider ADCs).

Noise Study for the Active Divider.

The RMS of pedestal distribution (@ All channels, individual)



- * The RMS of pedestal get excellent improvement !!
- * The RMS @ all channels are < 2 ch.

Coherent noise study.

* RUN2544 was triggered by clock signal due to study the coherent noise.

* Results :

$$\begin{cases} \sigma(\text{CNS}) = 9.639 \\ \sigma(\text{TNS}) = 56.26 \end{cases}$$

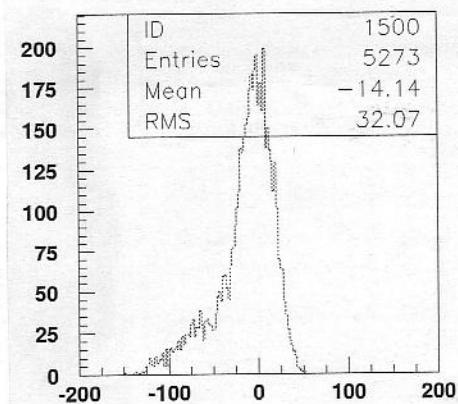
⇒ the coherent noise spectrum then

$$\sigma(\text{CNS}) = 55.9$$

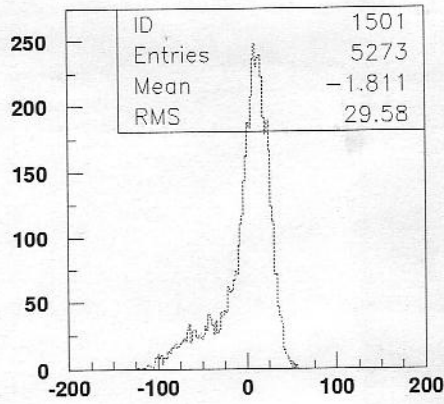
Sacha serious value !!

In February, the CNS was $\sigma(\text{CNS}) \sim 25.6$.
(See, P211, LogBook #2).

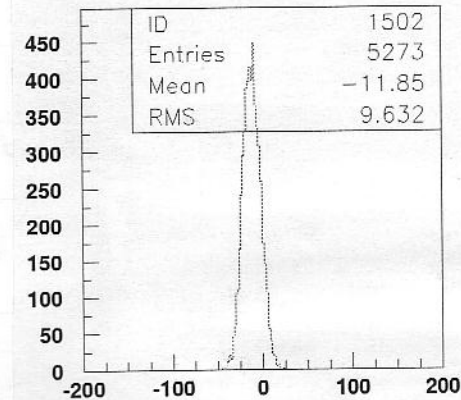
* The pedestal sum distribution has 2 components?
Was it occurred by divider ???



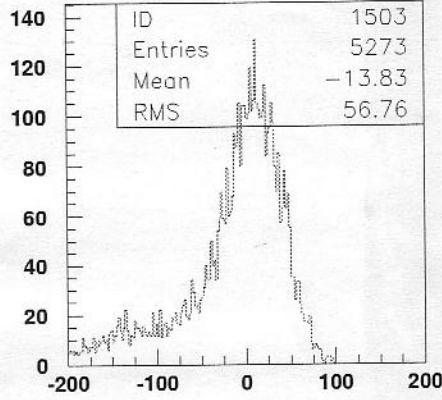
Even sum



Odd sum

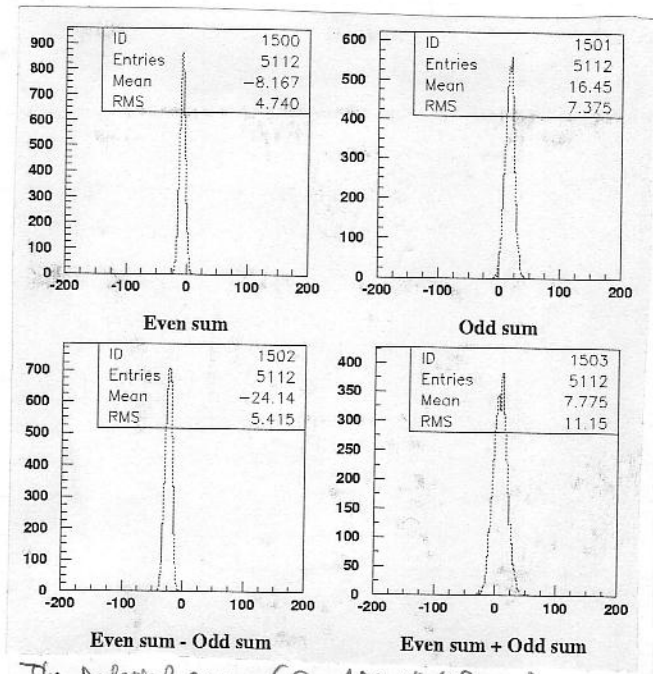
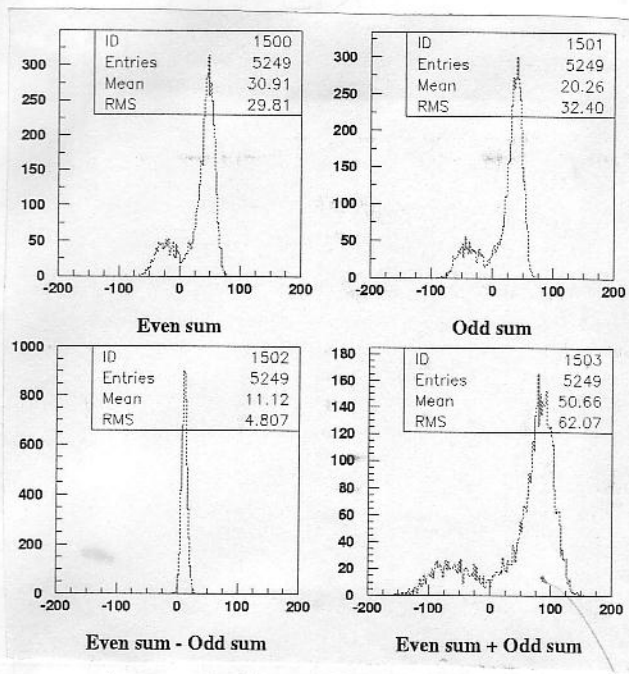


Even sum - Odd sum



Even sum + Odd sum

* Fine check the active divider effect for coherent noise.



The Pedestal Sum (@ ADC #1 ~ #127) with ACTIVE DIVIDER.

The Pedestal sum (@ ADC #128 ~) w/o ACTIVE DIVIDER.

$$\begin{cases} \sigma(RMS) = 4.807 \\ \sigma(TNS) = 62.07 \end{cases}$$

→ $\sigma(CNS) = 61.88$

These 2 components oscillated for few seconds sides.

$$\begin{cases} \sigma(RMS) = 5.415 \\ \sigma(TNS) = 11.15 \end{cases}$$

→ $\sigma(CNS) = 9.25$

- ▶ * The installation of active divider gave very excellent improvement as a decrease of pedestal RMS for individual channel.
- ▶ * But the coherent noise component was increased!

19/Apr /2002

- Add a new vacuum line for circulation
 - insert teflon tube in the inner vessel. (not heat exchanger)
- 15:00 outer vessel } start evacuating.
 inner vessel }
 P.S. line }

Handwritten notes in the top right corner, including a small diagram and some illegible text.

new pt100s set up

Pin assignment of the sensor cables

