

KEKB Shift Report Date : 2007/11/30(Fri)

Day Shift : Ogawa, Funakoshi, Koiso, Iida...(K); Ohkubo, Noguchi, Watanabe, Toyotomi(M); Hara(B)

Luminosity gradually recovered.

To-do list

1. Horizontal scan ○
 iBump vertical position/angle scan ○
2. Downhill simplex △

Peak \mathcal{L} / G-Ratio : **12.332** $\times 10^{33}$ **cm⁻²s⁻¹** / max **82** %

Shift \mathcal{L} : **182.0** **pb⁻¹**

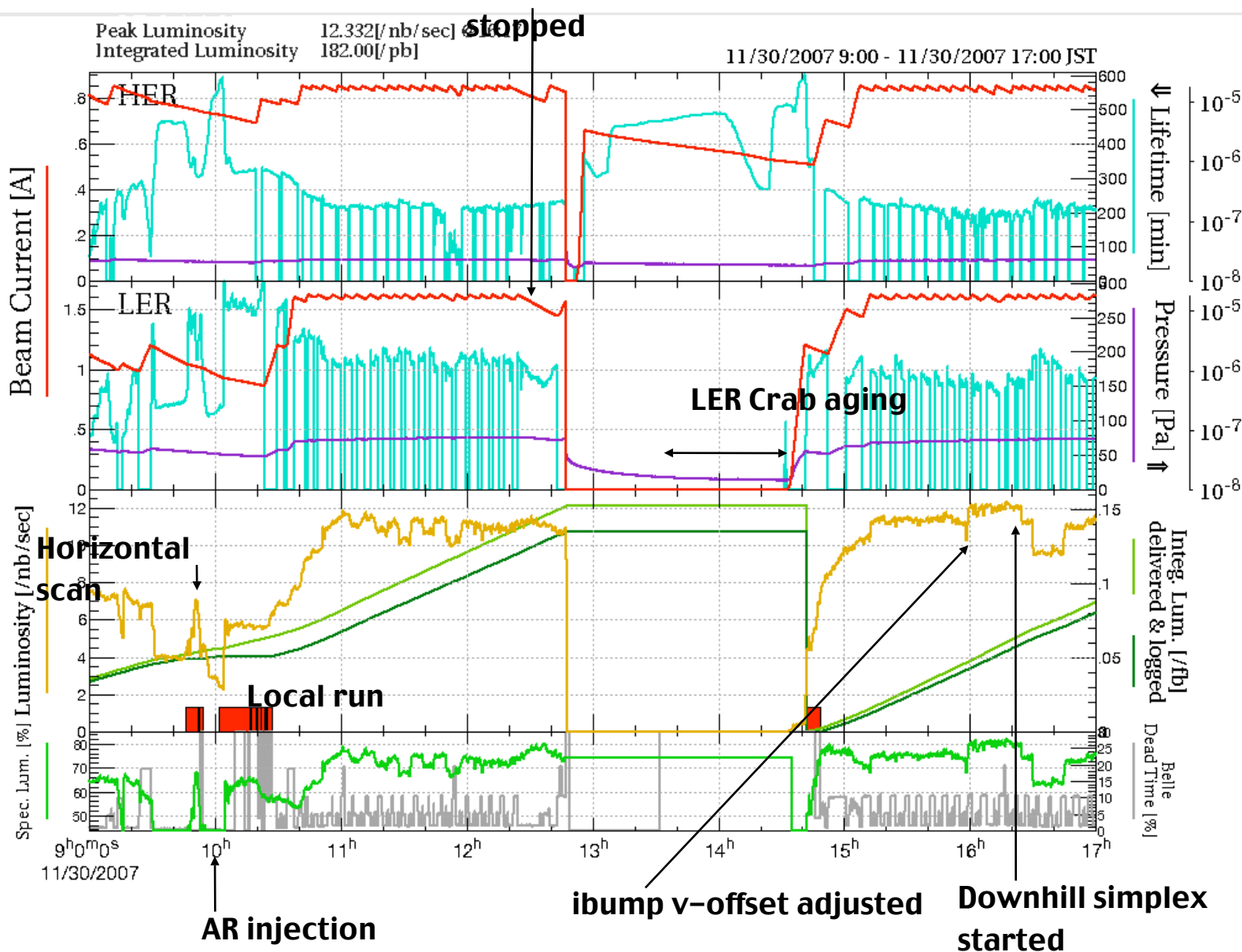
Beam Current : LER **1620** mA / HER **850** mA

Fill pattern : 3.06 spacing, 1trains, 1584+1 bunches

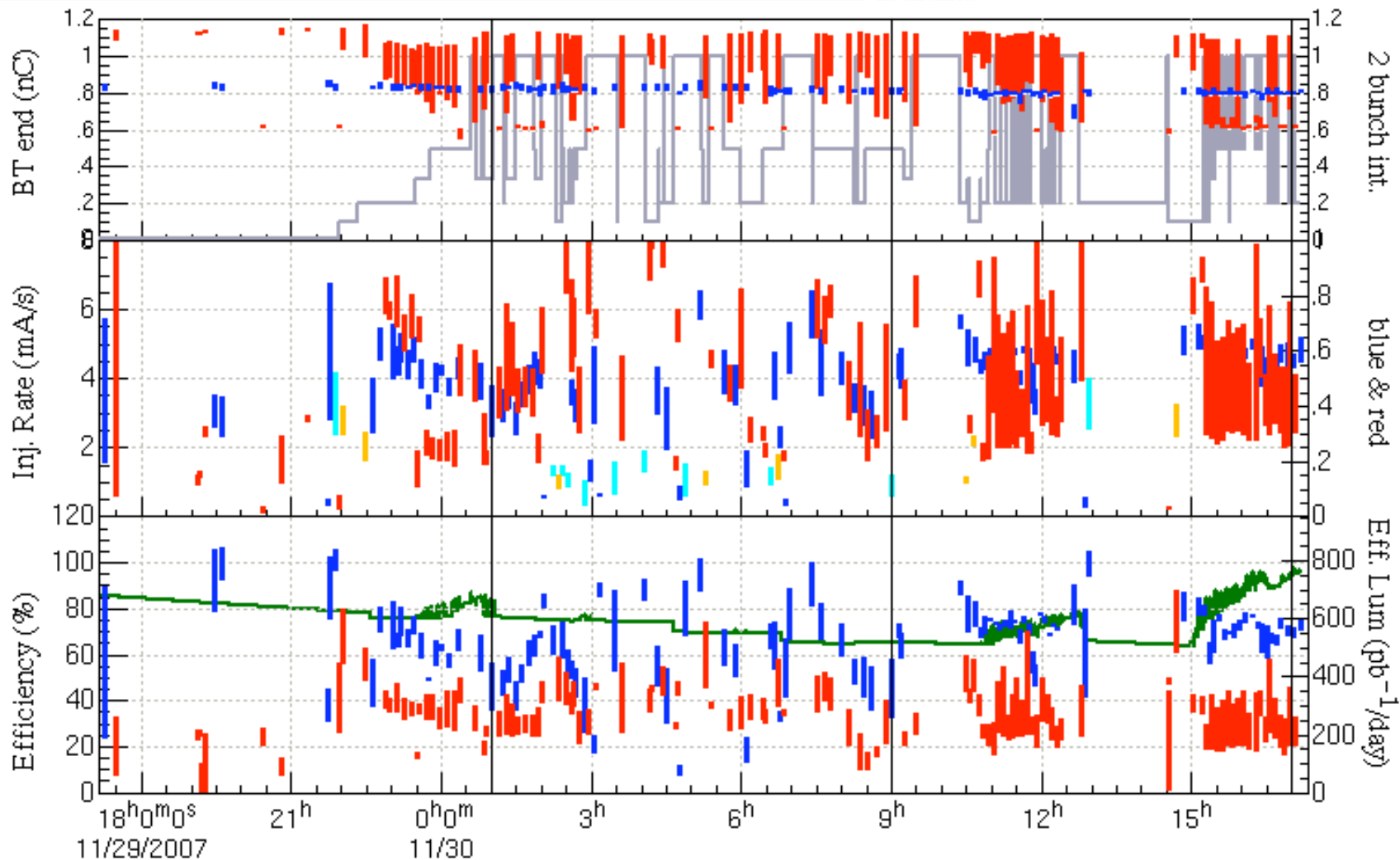
Aborts : LER_{only} : **0** / HER_{only} : **0** / Both : **1?**

Shift Summary

Linac Dm-inj server



Injection Summary



Tuning Items

- Horizontal offset, iBump v-position/angle
- Waist for both rings
- Luminosity maximum downhill simplex

Knob 1

LER

Room Phase
-20.45 → -20.85

Δf_{RF}
-1.96 → -9.45

Waist
0 → -.4

η
.31 → .43

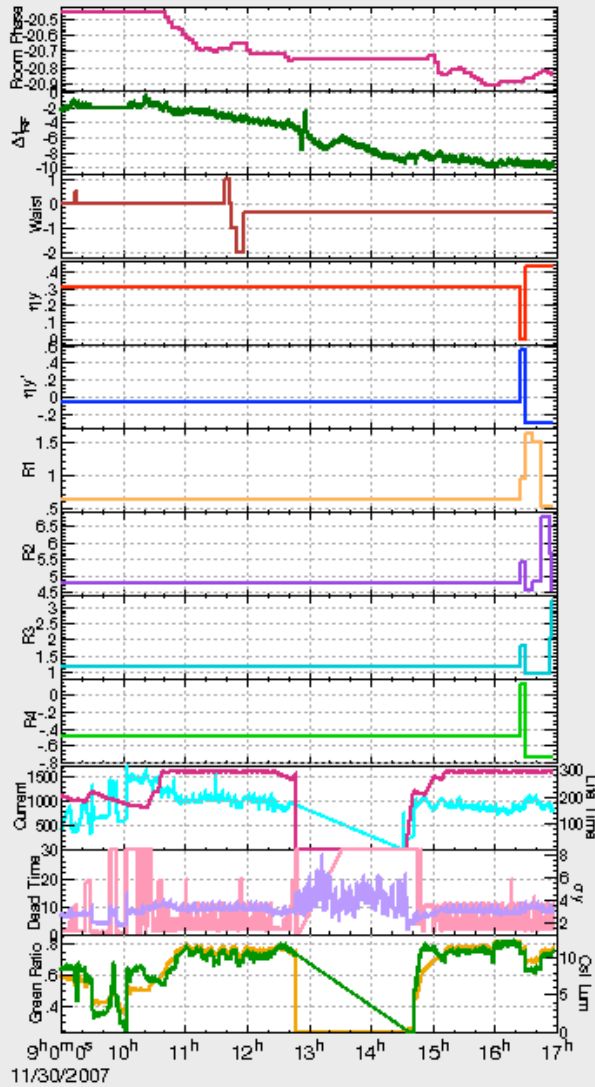
η'
-.07 → -.31

R1
.63 → .51

R2
4.79 → 4.55

R3
1.19 → 3.19

R4
-.5 → -.74



11/30/2007

HER

Voffset
-1.74 → -1.72

Vangle
-.56 → -.555

Waist
0 → -1

η
.34 → .22

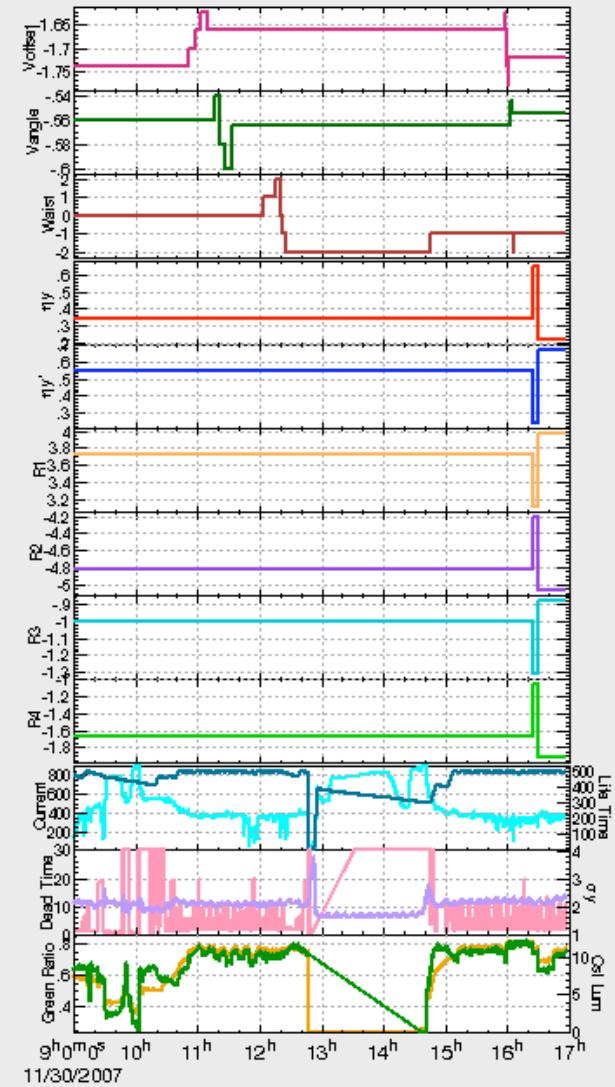
η'
.55 → .67

R1
3.73 → 3.97

R2
-4.83 → -5.07

R3
-1 → -.88

R4
-1.68 → -1.92



Lum_{Max}: 12.332
GR_{Max}: 82.21%

11/30/2007

Knob 2

LER

LER Size@Inj

0 -> 0@0A

v_x @0A

0 -> 0

v_y @0A

.5774 -> .5774

ξ_x

-.684 -> -.684

ξ_y

4.243 -> 4.243

$d_\delta \alpha_x^*$

15.76 -> 15.76

$d_\delta \alpha_y^*$

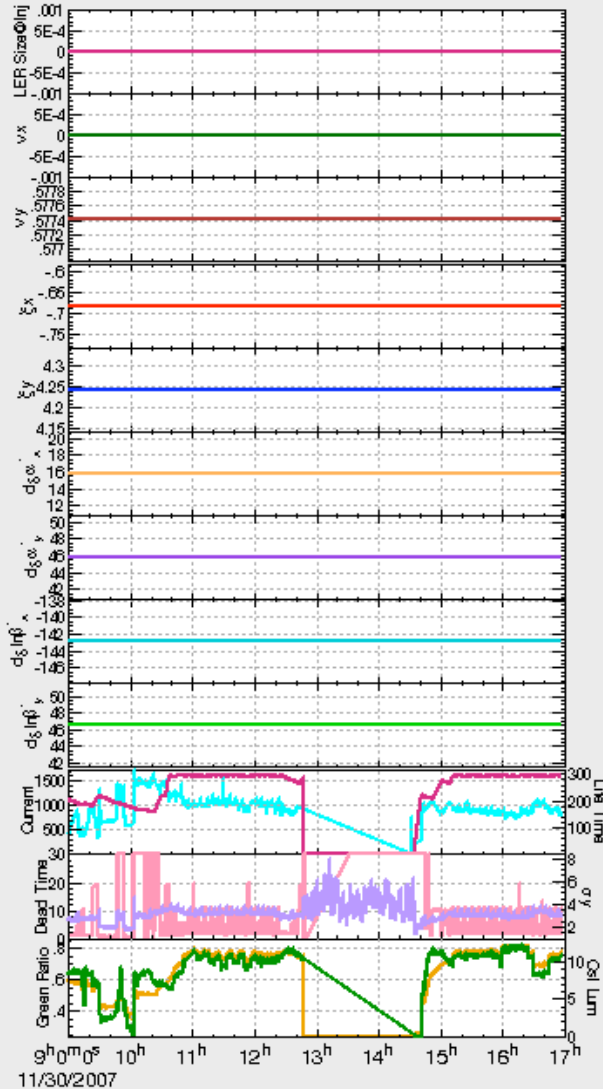
45.75 -> 45.75

$d_\delta \ln \beta_x^*$

-142.84 -> -142.84

$d_\delta \ln \beta_y^*$

46.56 -> 46.56



HER

LER Size@Col

0 -> 0@0A

v_x @0A

.5122 -> .5122

v_y @0A

.592 -> .592

ξ_x

-1.208 -> -1.208

ξ_y

.88 -> .88

$d_\delta \alpha_x^*$

-1 -> -1

$d_\delta \alpha_y^*$

-40.49 -> -40.49

$d_\delta \ln \beta_x^*$

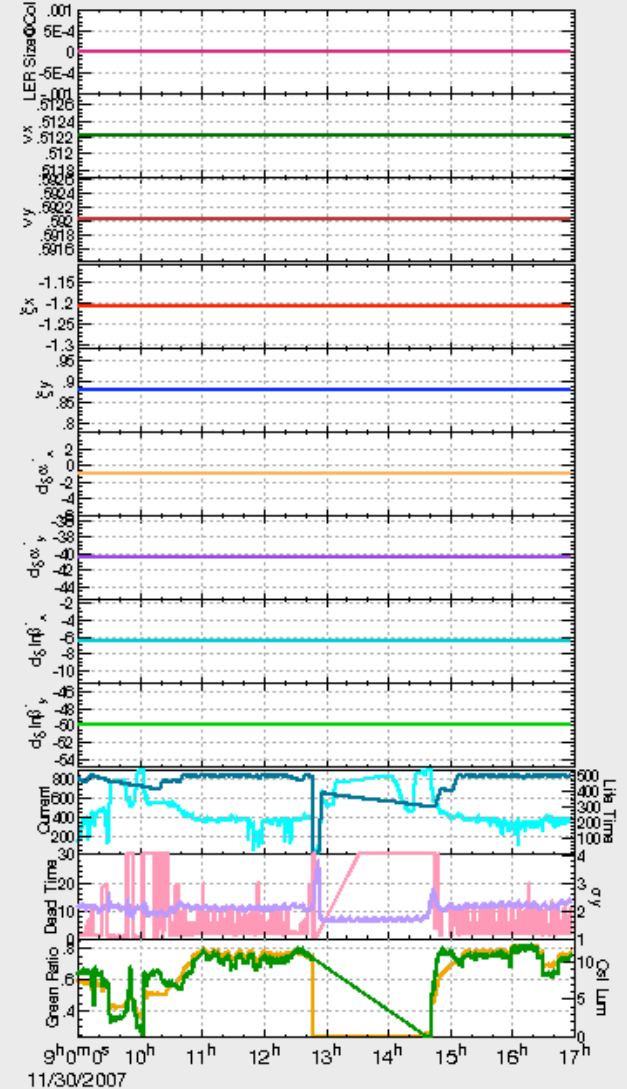
-6.55 -> -6.55

$d_\delta \ln \beta_y^*$

-49.97 -> -49.97

Lum_{MAX} :12.332

GR_{MAX} :82.21%



Knob 3

LER

Offset

.714 → .666

R2(Crab)

0 → 0

R4(Crab)

0 → 0

ηy (SX)

$-2.2E-5 \rightarrow -2.2E-5$

$\eta y'$ (SX)

$2.73E-4 \rightarrow 2.73E-4$

R1(SX)

$-1.1E-5 \rightarrow -1.1E-5$

R2(SX)

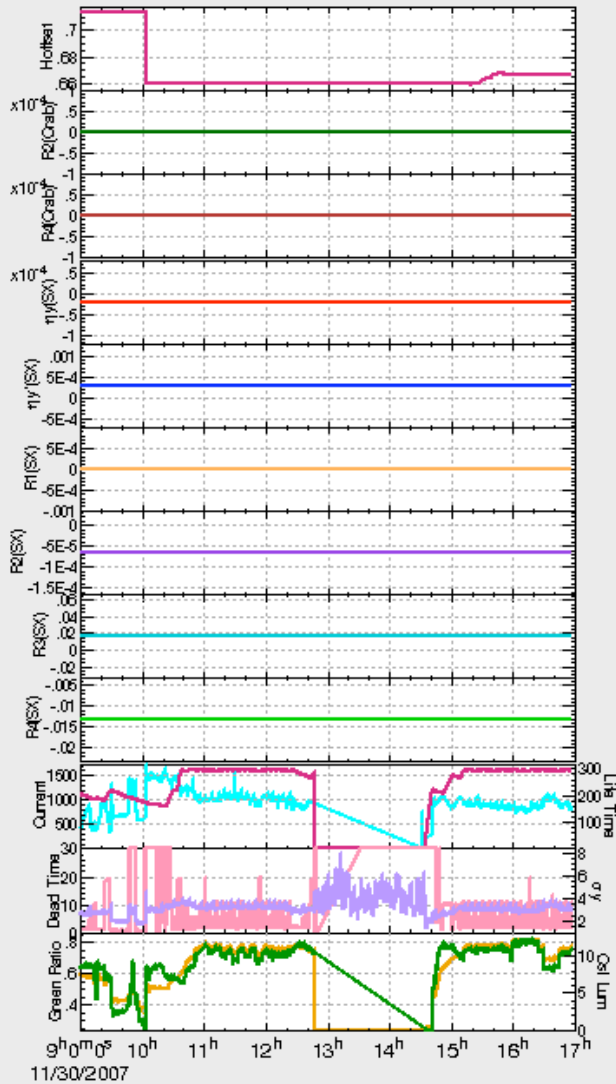
$-6.6E-5 \rightarrow -6.6E-5$

R3(SX)

.016 → .016

R4(SX)

-.013 → -.013



11/30/2007

HER

Hangle

0 → 0

R2(Crab)

0 → 0

R4(Crab)

0 → 0

ηy (SX)

0 → 0

$\eta y'$ (SX)

0 → 0

R1(SX)

0 → 0

R2(SX)

0 → 0

R3(SX)

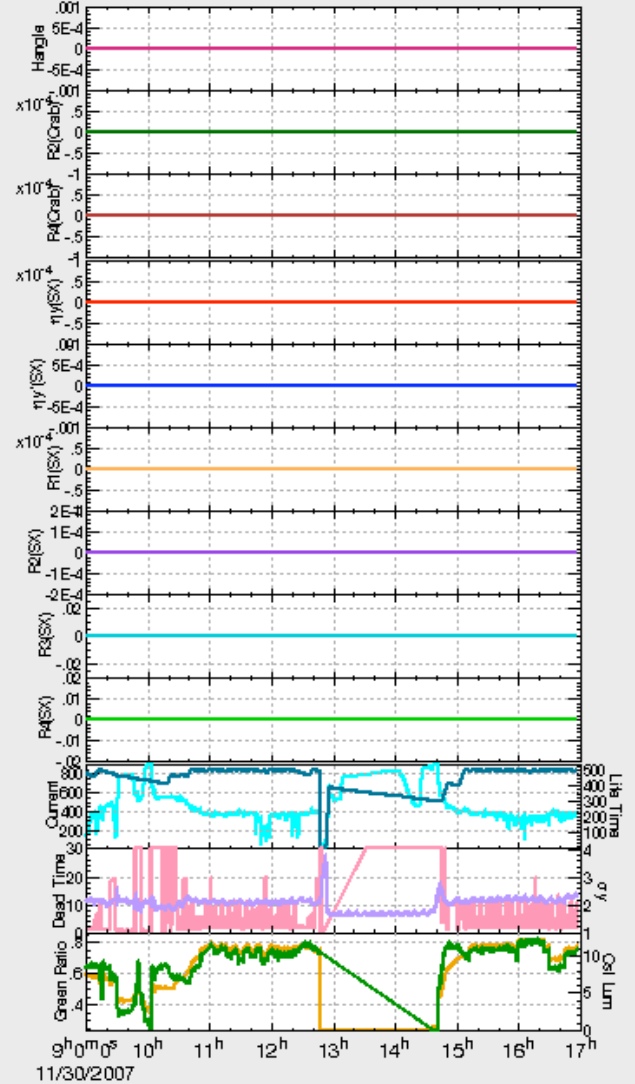
0 → 0

R4(SX)

0 → 0

Lum_{Max}: 12.332

GR_{Max}: 82.21%



11/30/2007

Comments

Troubles

1. 12:47 Both rings aborted.
LER Crab could not be recovered.
=> Morita (Crab shift) did aging for an hour to recover. Gas absorption configuration change due to slight temperature rise* yesterday may be the reason for aging. (Morita)
* Aging was carried out also on the maintenance day.
2. 15:24 Water leakage at (Ono)
=> Quick fix done.



Operationに関する感想、提案など

終わり

KEKB Shift Report Date : 2007/11/30(Fri.)

Evening Shift : Ebihara, Nishiwaki, Koiso (K); Asai, Kawasumi (M);

Smooth growth of Luminosity by Simplex

scan

To-Do list

1. Simplex Knob Scan in Luminosity Maximize mode

Peak \mathcal{L} / G-Ratio : **13.213** $\times 10^{33}$ **cm⁻²s⁻¹** / **87.6** %

Shift \mathcal{L} / Day \mathcal{L} : **298.2** **pb⁻¹** / **696.8** **pb⁻¹**

Beam Current : LER **1620** mA / HER **850** mA

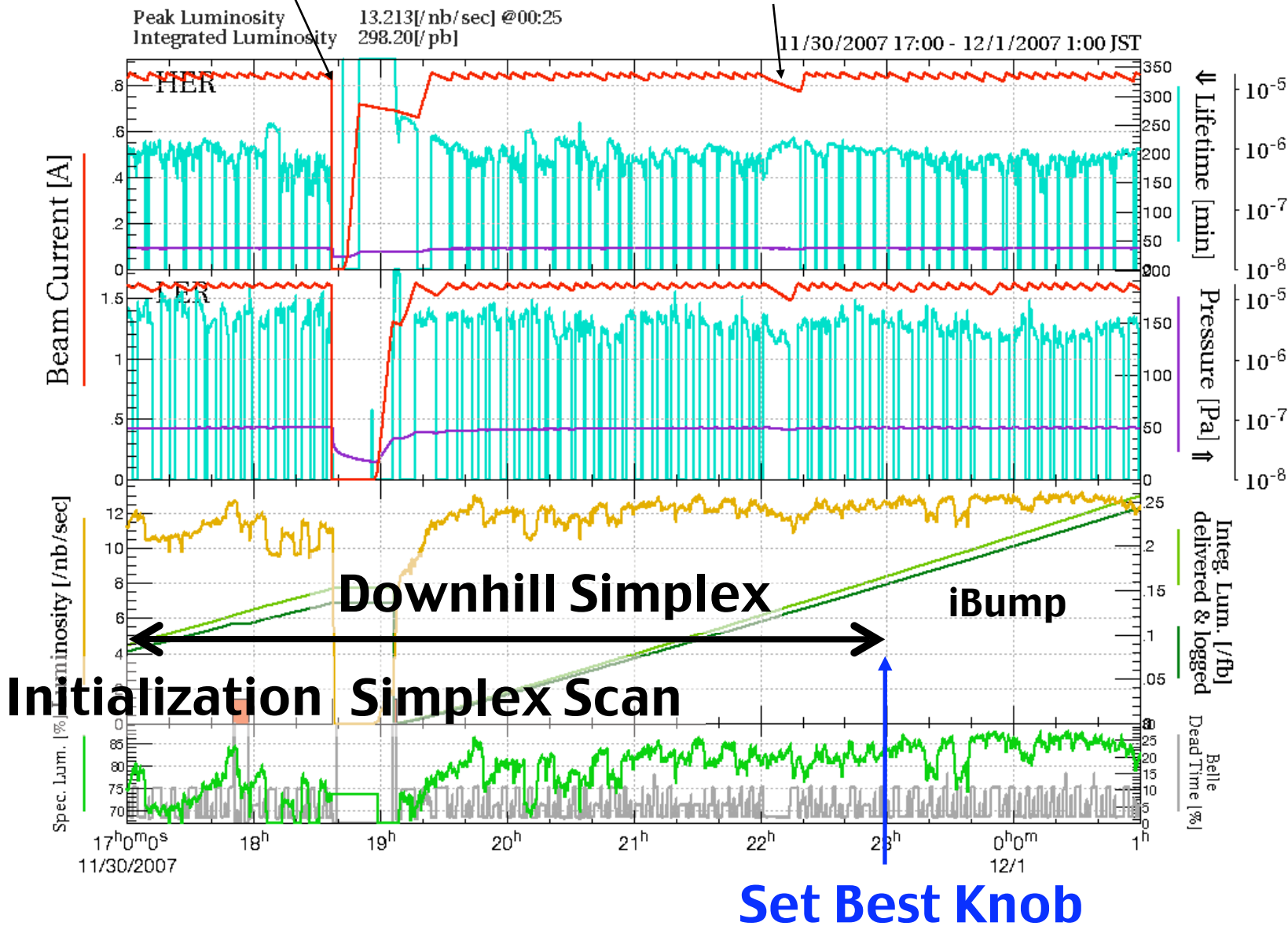
Fill pattern : 3.06spacing, 1 trains, 1584+1 bunches

Aborts : LER_{only} : **0** / HER_{only} : **0** / Both : **1** Earthquake

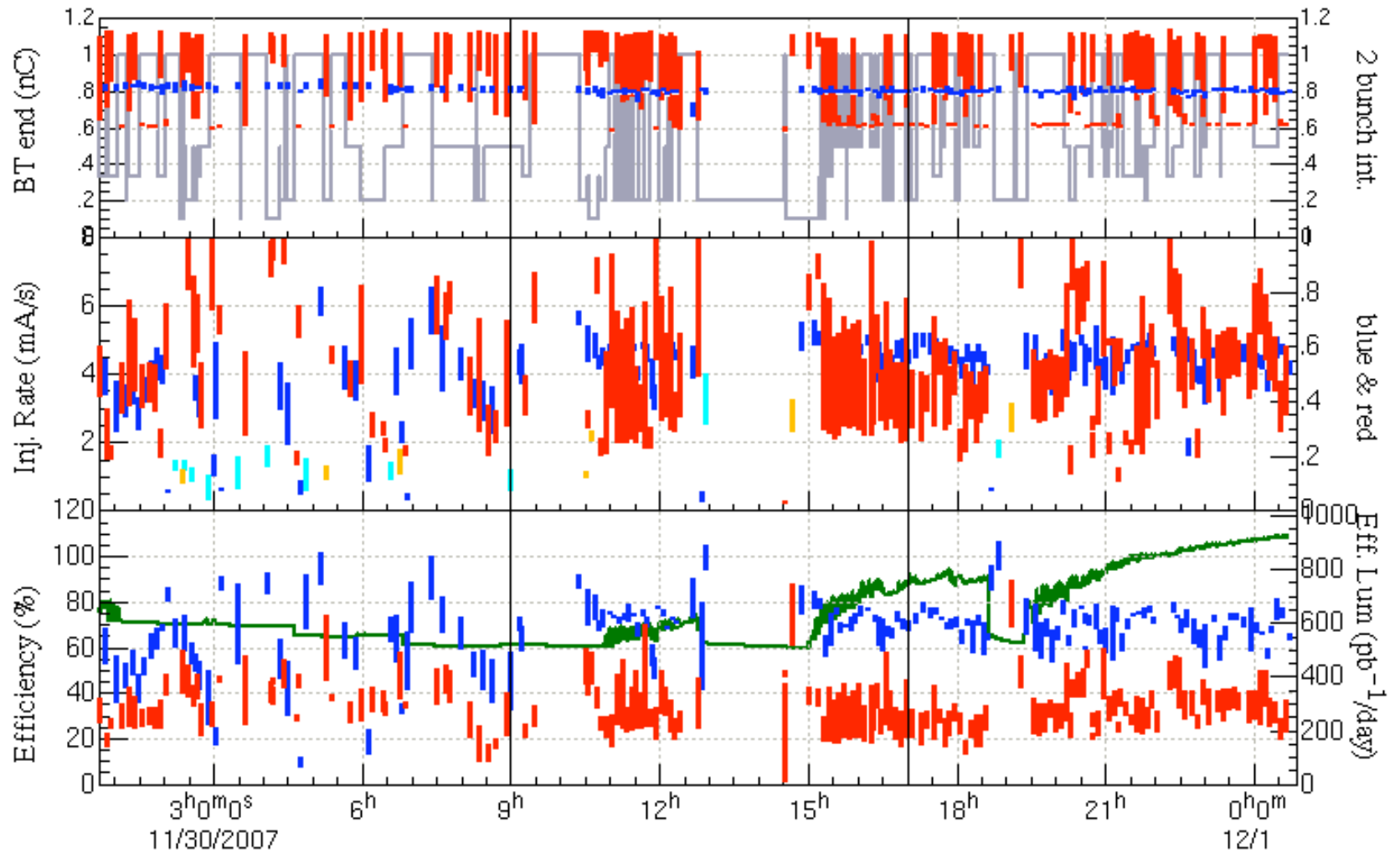
Earthquake

Shift Summary

AR



Injection Summary

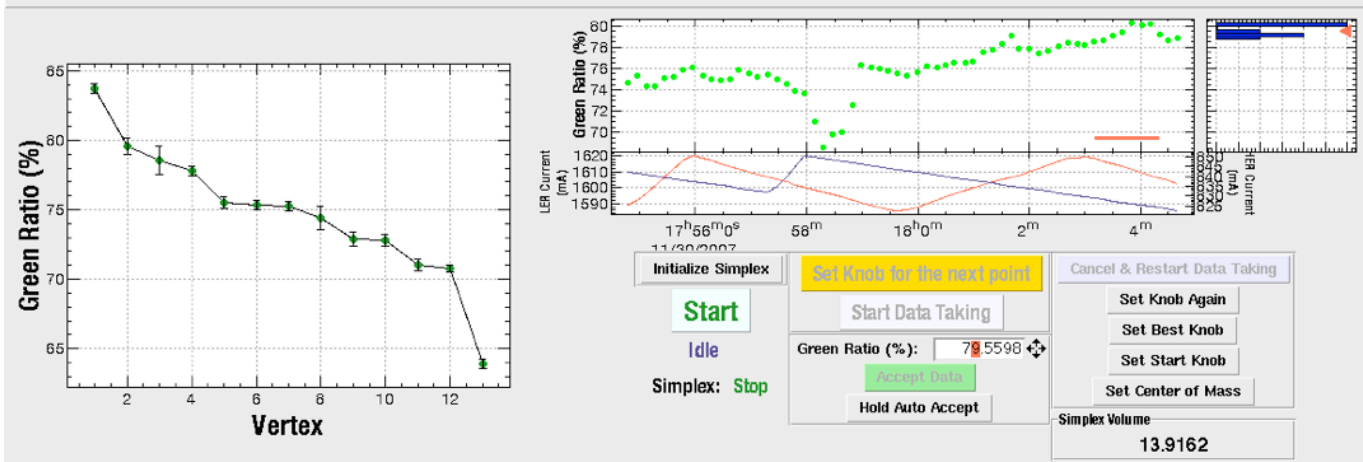


Tuning Items

- Simplex Scan in Luminosity maximize mode
- LER H-Tune +0.0020 -> -0.0020 ($\Delta_{\pm 0}$)
- To fill first 100 bunches. Those couldn't be filled due to a

<< Double click each line to set knob >>

#	R1L	R2L	R3L	R4L	EVL	EPYL	R1H	R2H	R3H	R4H	EYH	EPYH	σ_{yMER}^+	Time
NEKT	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	---	---
SET:	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	---	---
LAST:	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	79.56	---
START:	0.63	4.79	1.19	-0.50	0.31	-0.07	3.73	-4.83	-1.00	-1.68	0.34	0.55	79.43	---
1	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	83.74	---
2	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	-0.45	79.56	---
3	0.51	4.55	0.95	1.50	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	78.56	---
4	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-2.00	-1.92	0.22	0.67	77.83	---
5	0.51	4.55	3.19	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	75.49	---
6	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-2.83	-0.88	-1.92	0.22	0.67	75.35	---
7	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	1.34	0.67	75.26	---
8	0.94	5.41	1.81	0.12	0.00	0.55	3.11	-4.21	-1.31	-1.06	0.65	0.24	74.38	---
9	0.51	6.79	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	72.85	---
10	0.51	4.55	0.95	-0.74	0.43	-0.31	1.73	-5.07	-0.88	-1.92	0.22	0.67	72.78	---
11	0.51	4.55	0.95	-0.74	0.43	1.93	3.97	-5.07	-0.88	-1.92	0.22	0.67	71.01	---
12	0.51	4.55	0.95	-0.74	-0.69	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	70.75	---
13	1.63	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	-1.92	0.22	0.67	63.94	---

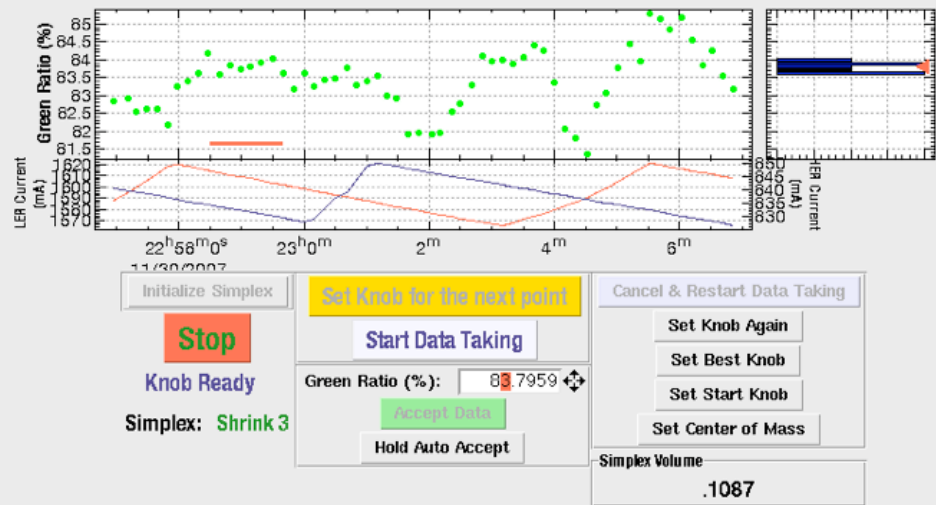
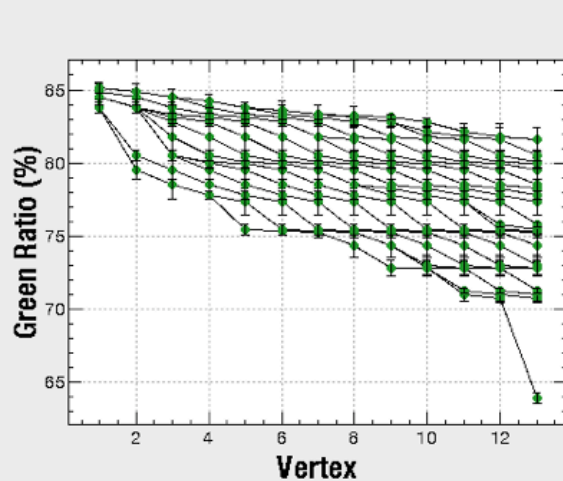


Setting the initial values

Tuning Items

<< Double click each line to set knob >>

#	R1L	R2L	R3L	R4L	EYL	EPYL	R1H	R2H	R3H	R4H	EYH	EPYH	G_{YMER}^*	Time
NEXT:	0.39	4.35	1.34	-0.61	0.19	-0.08	4.51	-4.05	-1.29	-0.08	0.97	0.40	---	---
SET:	0.40	4.36	1.31	-1.65	0.20	-0.10	4.47	-4.13	-1.26	-0.22	0.91	-0.18	---	---
LAST:	0.46	4.77	1.45	-0.88	0.22	-0.01	5.21	-4.28	-1.23	-0.75	0.73	0.09	83.80	---
START:	0.63	4.79	1.19	-0.50	0.31	-0.07	3.73	-4.83	-1.00	-1.68	0.34	0.55	79.43	---
1	0.40	4.36	1.31	-1.65	0.20	-0.10	4.47	-4.13	-1.26	-0.22	0.91	-0.18	85.16	---
2	0.41	4.39	1.50	0.79	0.18	-0.11	4.41	-4.79	-0.34	-0.39	0.76	-0.10	84.83	---
3	0.51	5.19	1.59	-0.10	0.23	0.09	5.95	-4.43	-1.20	-1.28	0.54	0.35	84.50	---
4	0.38	4.33	1.37	0.43	0.17	-0.07	4.55	-3.98	-1.32	0.06	1.03	0.99	84.19	---
5	0.51	4.55	0.95	-0.74	0.43	-0.31	3.97	-5.07	-0.88	0.32	0.22	0.67	83.74	---
6	0.47	3.63	1.41	-0.06	0.25	-0.02	4.17	-4.41	-1.18	-1.00	0.63	0.31	83.56	---
7	0.39	4.30	1.31	0.46	0.71	-0.25	4.46	-4.94	-1.48	-0.72	0.63	0.07	83.31	---
8	0.24	4.73	1.22	-0.21	0.31	-0.05	3.95	-4.57	-1.09	-1.10	0.56	0.38	83.22	---
9	0.49	4.52	1.16	-0.33	0.31	-0.24	4.07	-5.30	-1.09	-1.51	0.89	0.46	83.10	---
10	0.45	4.47	-0.53	0.39	0.10	-0.13	4.25	-4.88	-1.44	-0.79	0.71	0.11	82.75	---
11	0.40	4.58	0.58	-0.20	0.38	0.90	4.39	-4.63	-0.97	-0.40	0.76	0.33	82.17	---
12	0.71	4.95	1.58	-0.11	0.16	0.14	3.61	-4.44	-1.20	-1.29	0.54	0.35	81.82	---
13	0.46	4.45	0.34	-0.20	0.50	-0.27	4.17	-2.95	-0.74	-1.38	0.70	0.40	81.59	---



- Set the best knob
- iBump V-offset, angle
- HER waist

Knob 1

LER

Room Phase
-20.86 -> -20.38

Δf_{RF}
-10.05 -> -9.14

Waist
-.4 -> -.4

η_y
.43 -> .2

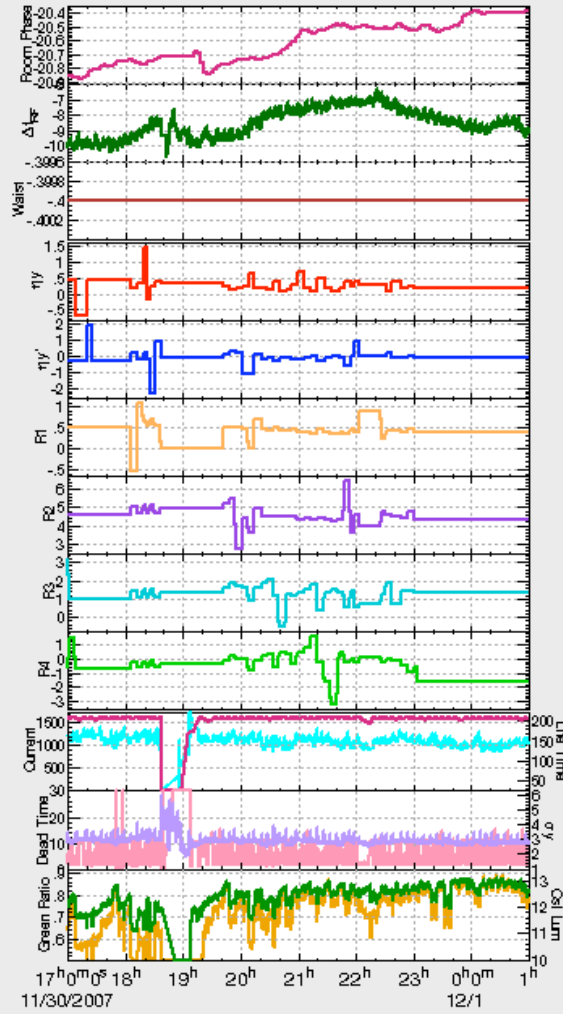
η_y'
-.31 -> -.1

R1
.51 -> .4

R2
4.55 -> 4.36

R3
3.19 -> 1.31

R4
-.74 -> -1.65



HER

Voffset
-1.72 -> -1.75

Vangle
-.555 -> -.555

Waist
-1 -> 1.5

η_y
.22 -> .91

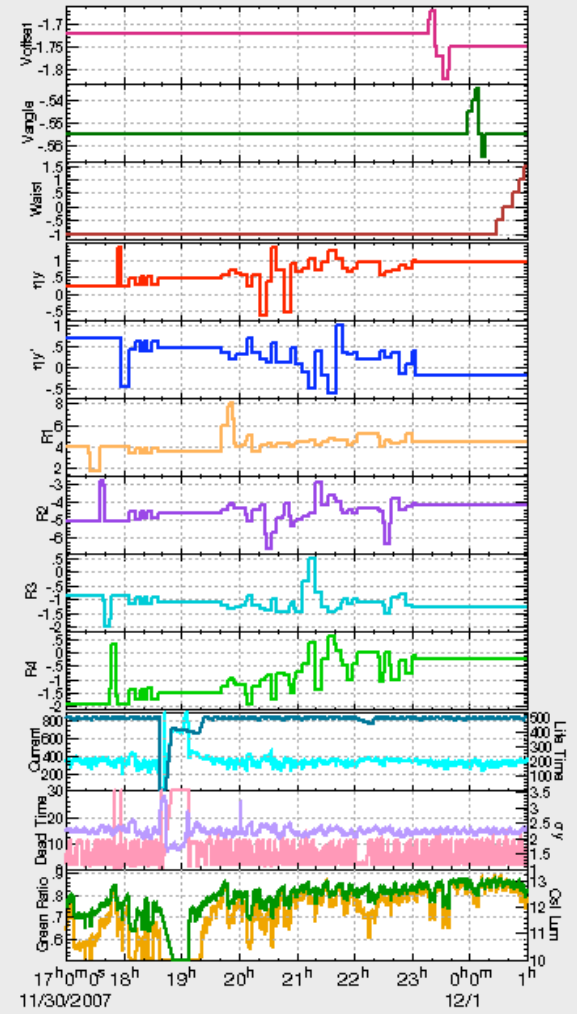
η_y'
.67 -> -.18

R1
3.97 -> 4.47

R2
-5.07 -> -4.13

R3
-.88 -> -1.26

R4
-1.92 -> -.22



Lum_{MAX}:13.213
GR_{MAX}:87.67%

◆ This ◇ Prev ◇ Prev² ◇ Prev³ ◇ Any ▶ Time range ...

Knob 2

LER

LER Size@Inj

0 -> 0@0A

v_x @0A

0 -> .5087

v_y @0A

.5774 -> .5774

ξ_x

-.684 -> -.684

ξ_y

4.243 -> 4.243

$d_8 \alpha_x$

15.76 -> 15.76

$d_8 \alpha_y$

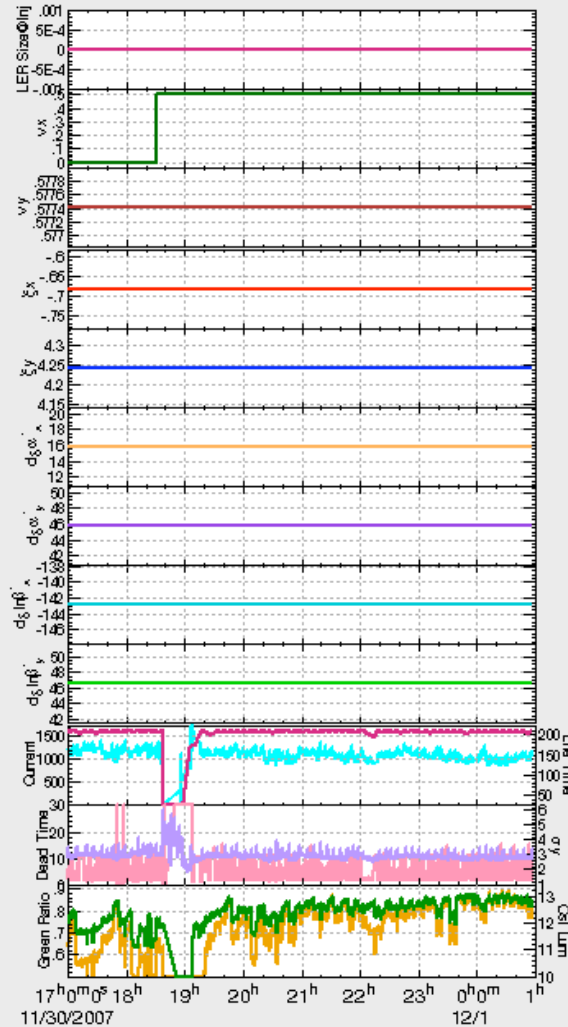
45.75 -> 45.75

$d_8 \ln \beta_x$

-142.84 -> -142.84

$d_8 \ln \beta_y$

46.56 -> 46.56



HER

LER Size@Col

0 -> 0@0A

v_x @0A

.5122 -> .5122

v_y @0A

.592 -> .592

ξ_x

-1.206 -> -1.206

ξ_y

.88 -> .88

$d_8 \alpha_x$

-1 -> -1

$d_8 \alpha_y$

-40.49 -> -40.49

$d_8 \ln \beta_x$

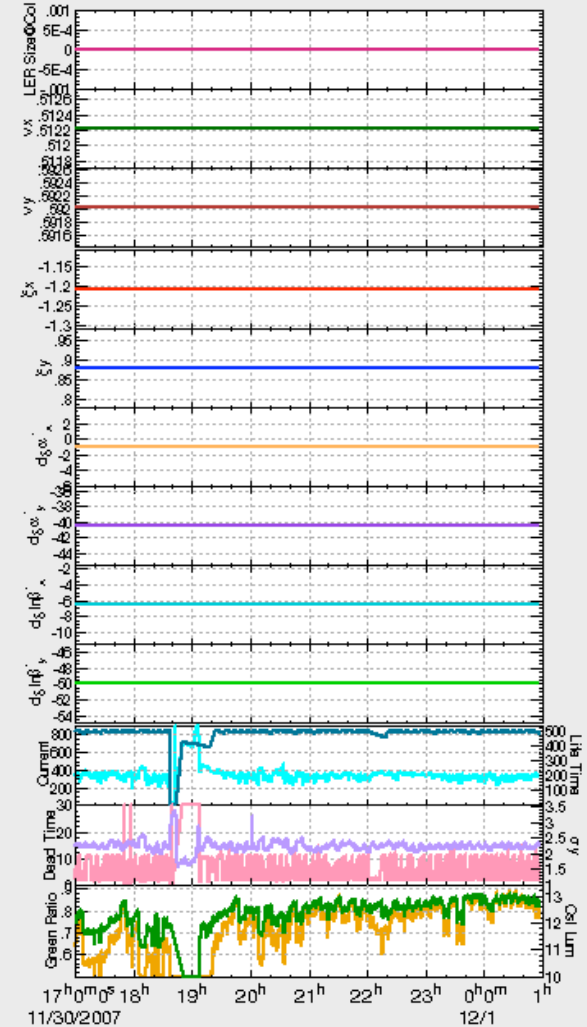
-6.55 -> -6.55

$d_8 \ln \beta_y$

-49.97 -> -49.97

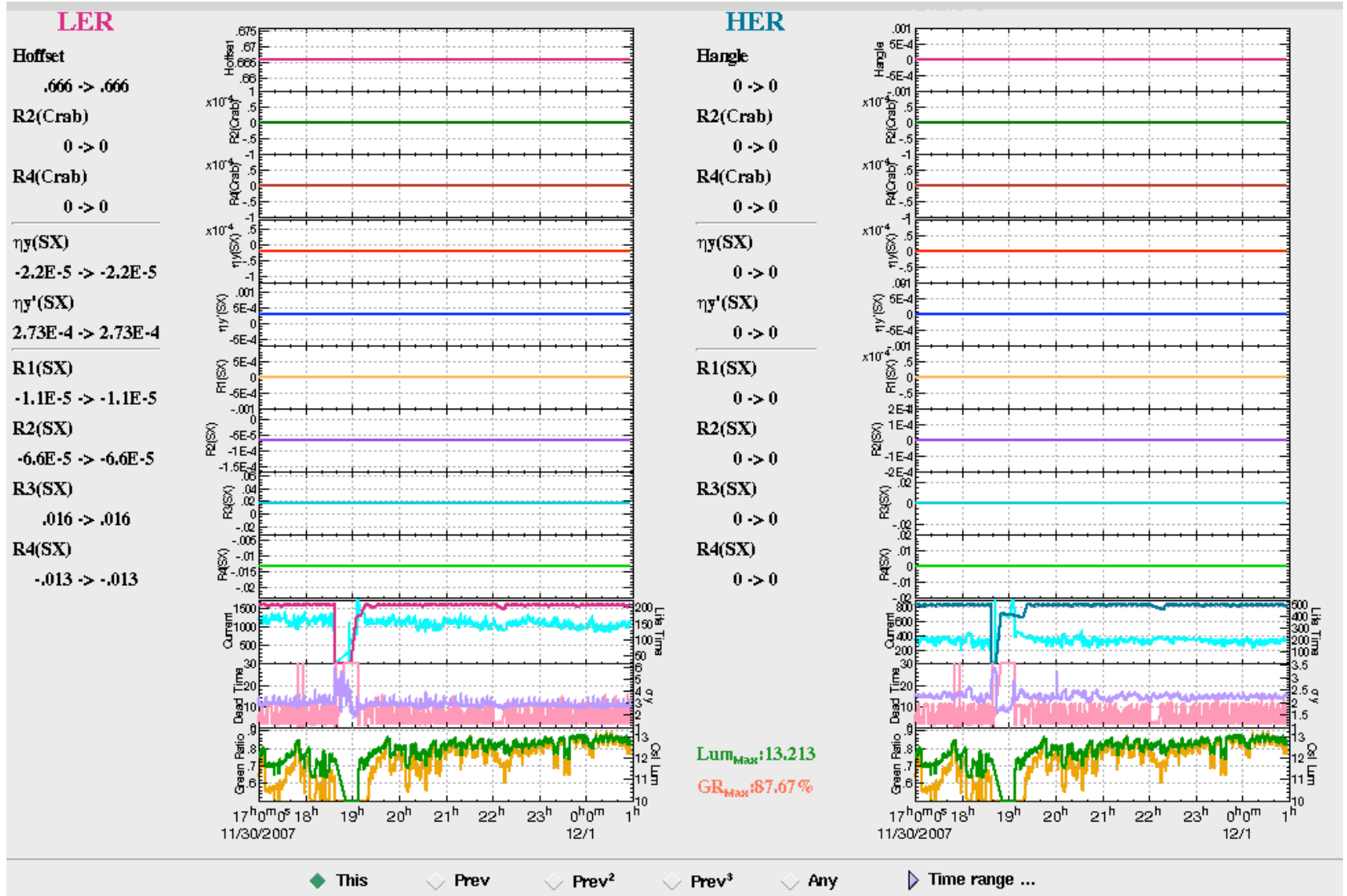
Lum_{Max}: 13.213

GR_{Max}: 87.67%



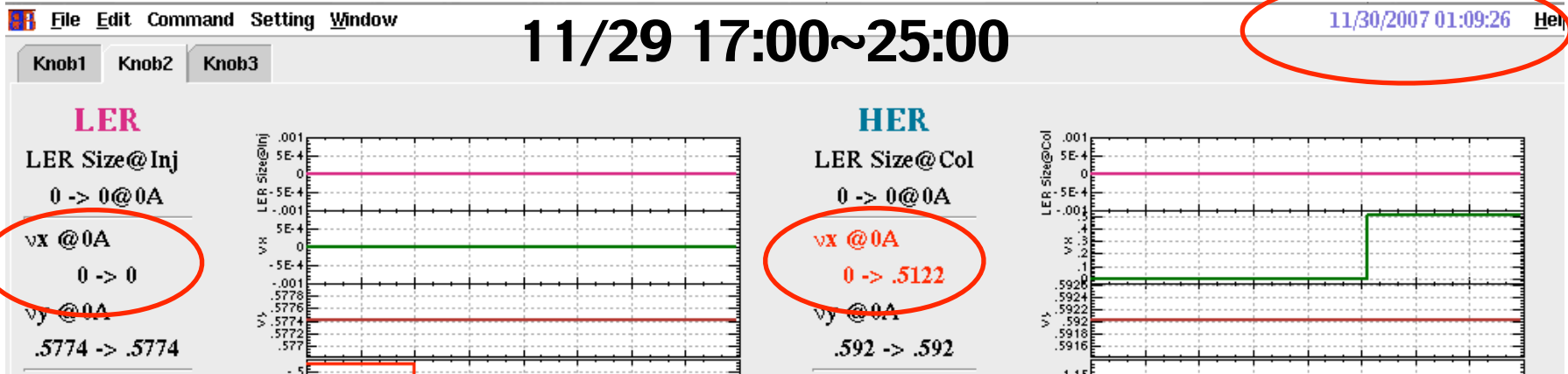
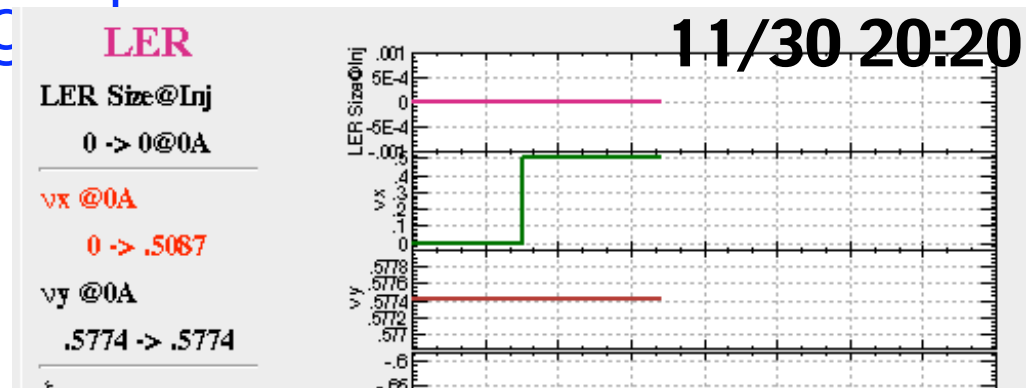
◆ This ◇ Prev ◇ Prev² ◇ Prev³ ◇ Any ▶ Time range ...

Knob 3



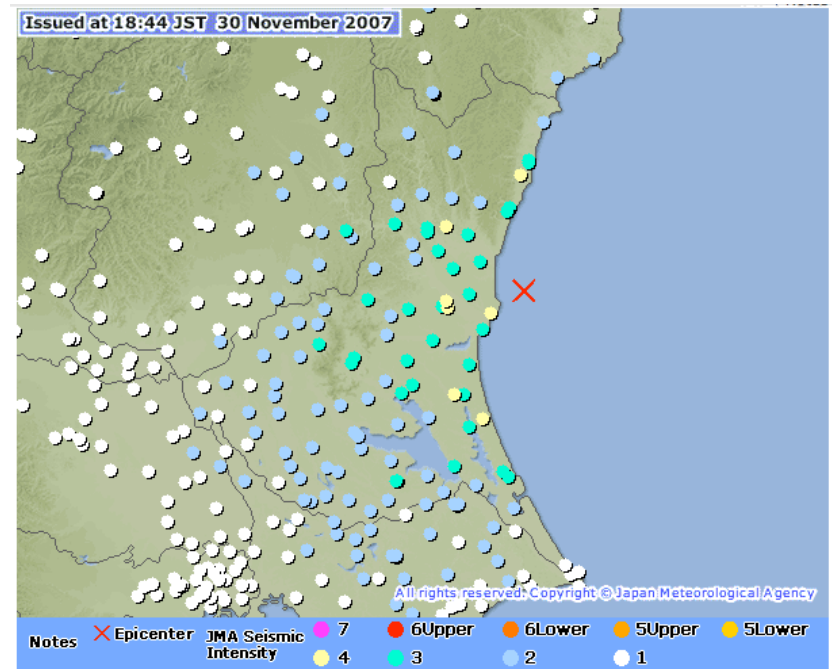
Comments

- LER and HER H-tune values in IPknob panel were "0" from yesterday evening. They returned to correct values when the tunes were changed.



Troubles

1. 18:32 LER/HER Abort (Earthquake)
 - In Tsukuba, intensity 2 in Japanese original scale.



Earthquake Information (Information about Seismic Intensity at each site)
Issued at 18:44 JST 30 Nov 2007

Occurred at (JST)	Latitude (degree)	Longitude (degree)	Depth	Magnitude	Region Name
18:37 JST 30 Nov 2007	36.4N	140.7E	50km	4.5	OFF IBARAKI PREF

Operationに関する感想、提案など

終わり

KEKB Shift Report Date : 2007/12/01 (Sat.)

Morning Shift : Kageyama (K); Aoyama, Shimodoma (M); Higuchi (B)

A Very Smooth Owl Shift in the Weekend

Plans

- Avoid aggressive machine tuning.
- Keep the machine condition stable.

Peak \mathcal{L} / G-Ratio : **1.3482** $\times 10^{34}$ **cm⁻²s⁻¹** / **88** %

Shift \mathcal{L} / Day \mathcal{L} : **344** **pb⁻¹** / *****.*** **pb⁻¹**

Beam Current : LER **1.62** A / HER **0.85** A

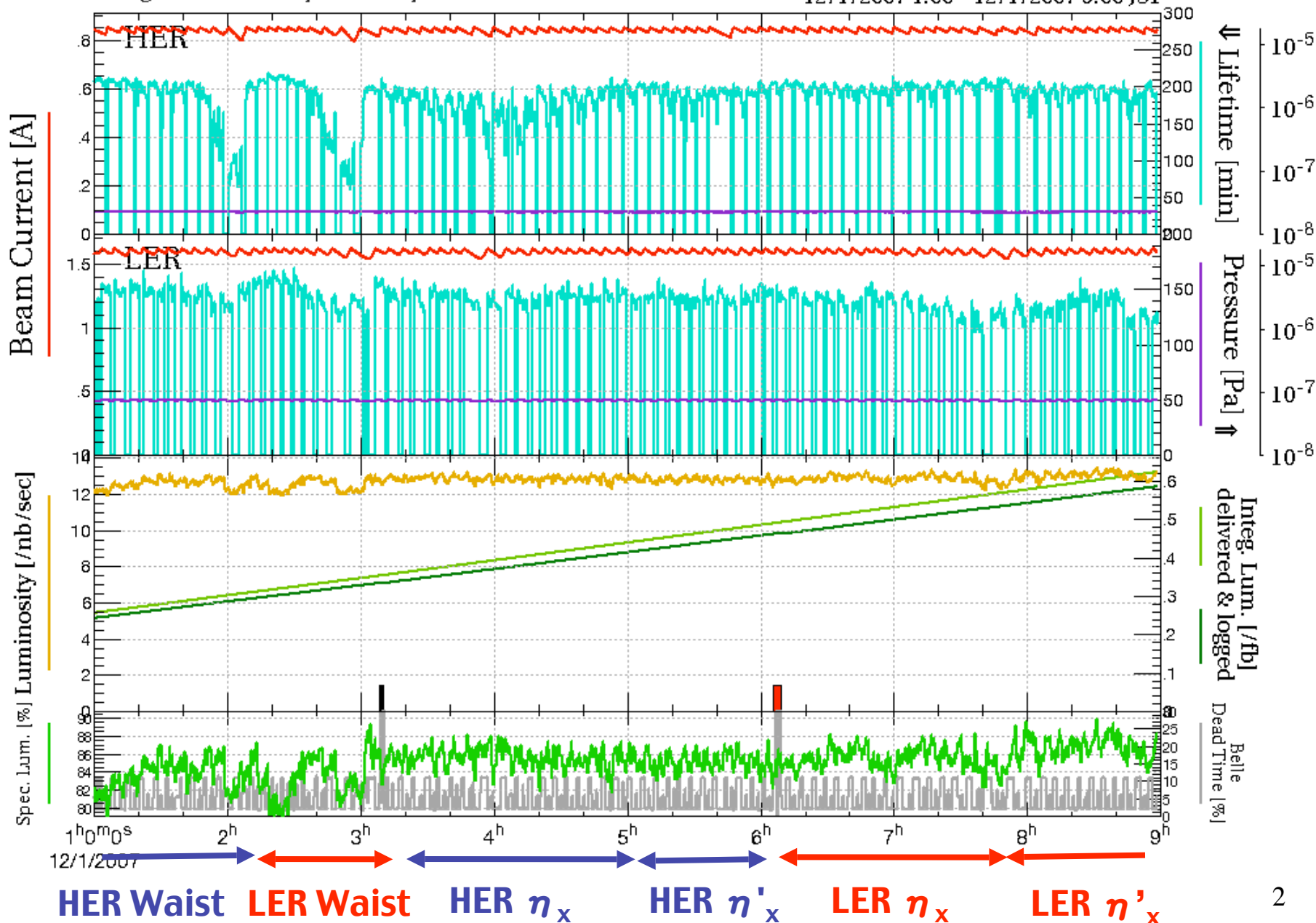
Fill pattern : 3.06 spacing, 1 train, 1584+1
bunches

Aborts : LER_{only} : **0** / HER_{only} : **0** / Both : **0**

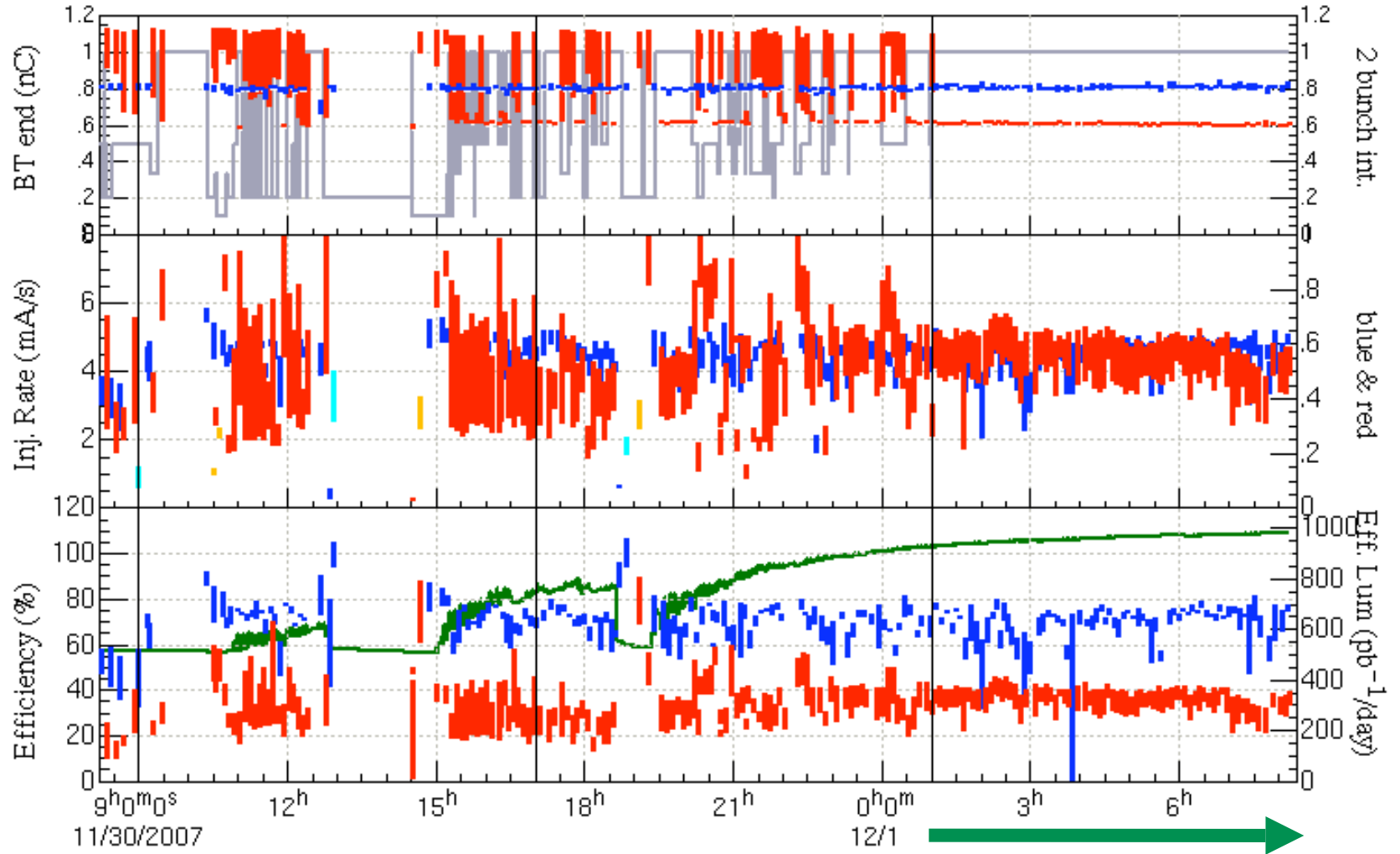
Shift Summary

Peak Luminosity 13.482[nb/sec] @08:31
 Integrated Luminosity 343.00[fb]

12/1/2007 1:00 - 12/1/2007 9:00 JST



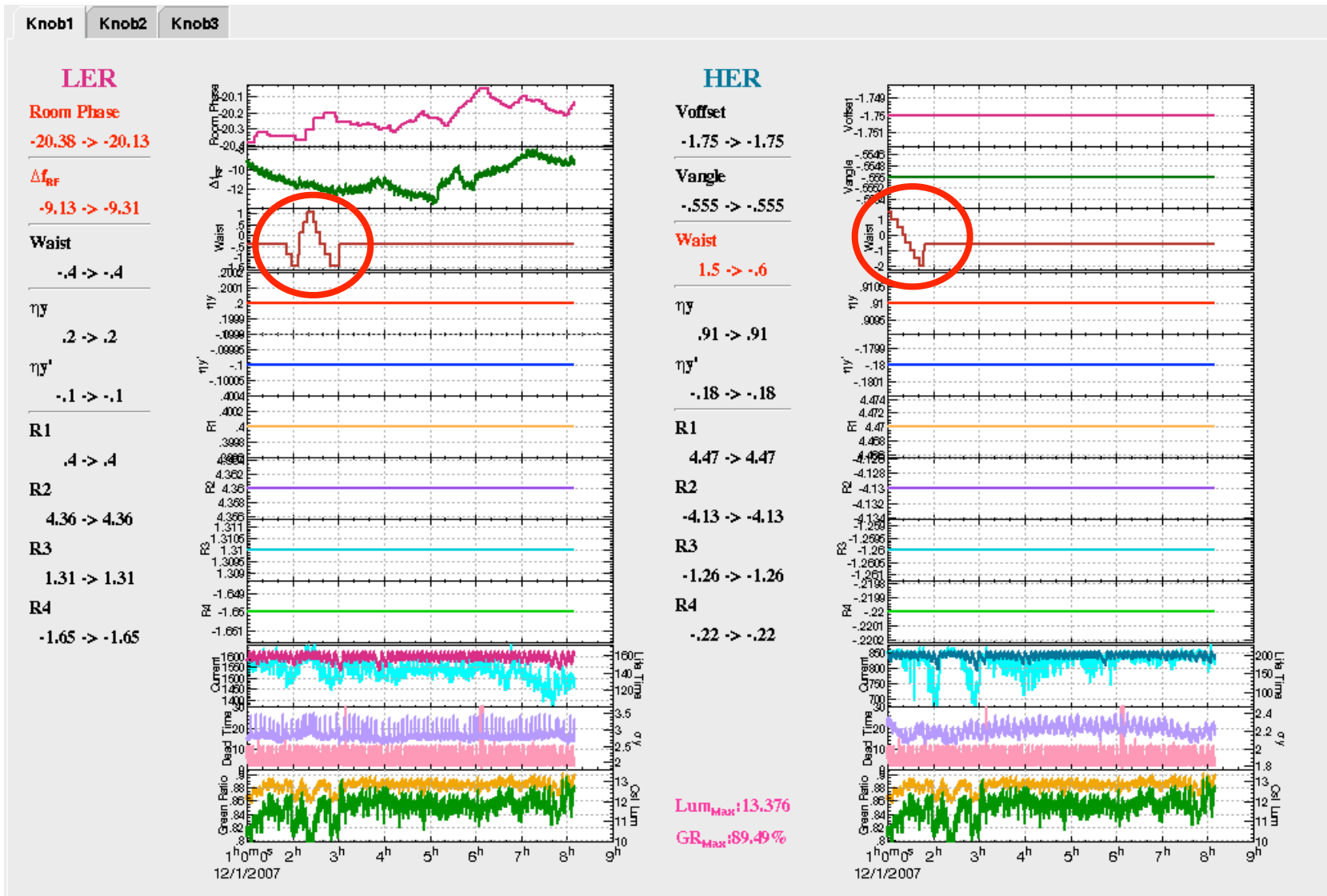
Injection Summary



Tuning Items

- HER Waist: -1.0 → -0.6
- LER Waist: -0.4 → -0.4
- HER η_x @IP: 0.0 → 0.0
- HER η'_x @IP: 0.0 → 0.0
- LER η_x @IP: 0.0 → 12.0
- LER η'_x @IP: 0.0 →

Knob 1



Knob 2

Knob1 Knob2 Knob3

LER

LER Size@Inj

0 -> 0@0A

v_x @0A

.5087 -> .5087

v_y @0A

.5774 -> .5774

ξ_x

-.684 -> -.684

ξ_y

4.243 -> 4.243

$d_5 \alpha'_x$

15.76 -> 15.76

$d_5 \alpha'_y$

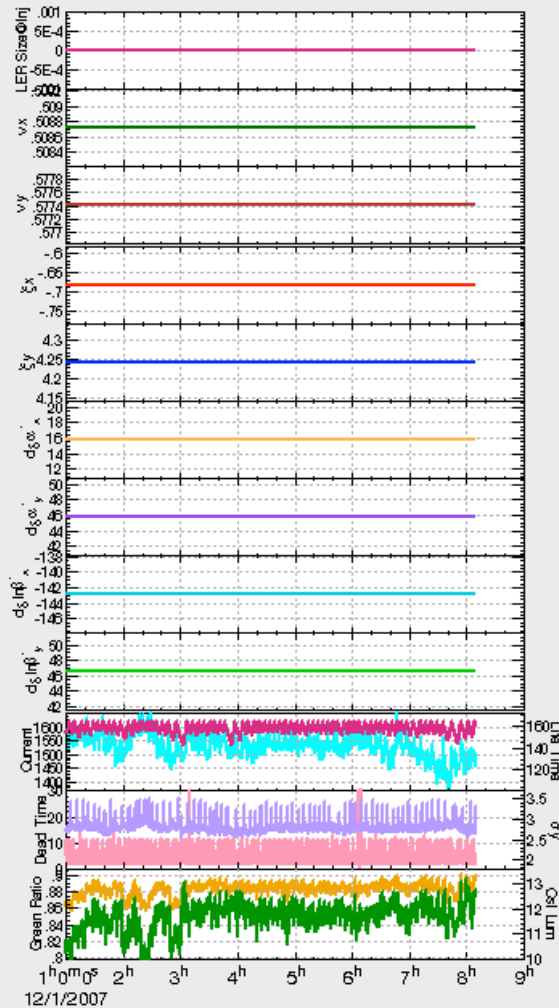
45.75 -> 45.75

$d_5 \ln \beta'_x$

-142.84 -> -142.84

$d_5 \ln \beta'_y$

46.56 -> 46.56



HER

LER Size@Col

0 -> 0@0A

v_x @0A

.5122 -> .5122

v_y @0A

.592 -> .592

ξ_x

-1.208 -> -1.208

ξ_y

.88 -> .88

$d_5 \alpha'_x$

-1 -> -1

$d_5 \alpha'_y$

-40.49 -> -40.49

$d_5 \ln \beta'_x$

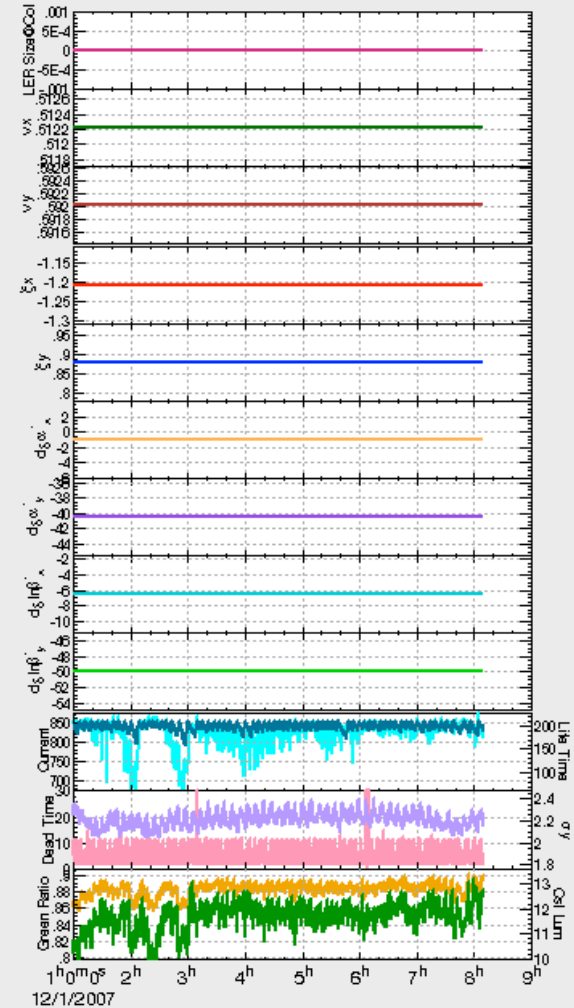
-6.55 -> -6.55

$d_5 \ln \beta'_y$

-49.97 -> -49.97

Lum_{Max}: 13.376

GR_{Max}: 89.49%



Knob 3

Knob1 Knob2 Knob3

LER

Hoffset

.666 → .666

R2(Crab)

0 → 0

R4(Crab)

0 → 0

$\eta y(SX)$

-2.2E-5 → -2.2E-5

$\eta y'(SX)$

2.73E-4 → 2.73E-4

R1(SX)

-1.1E-5 → -1.1E-5

R2(SX)

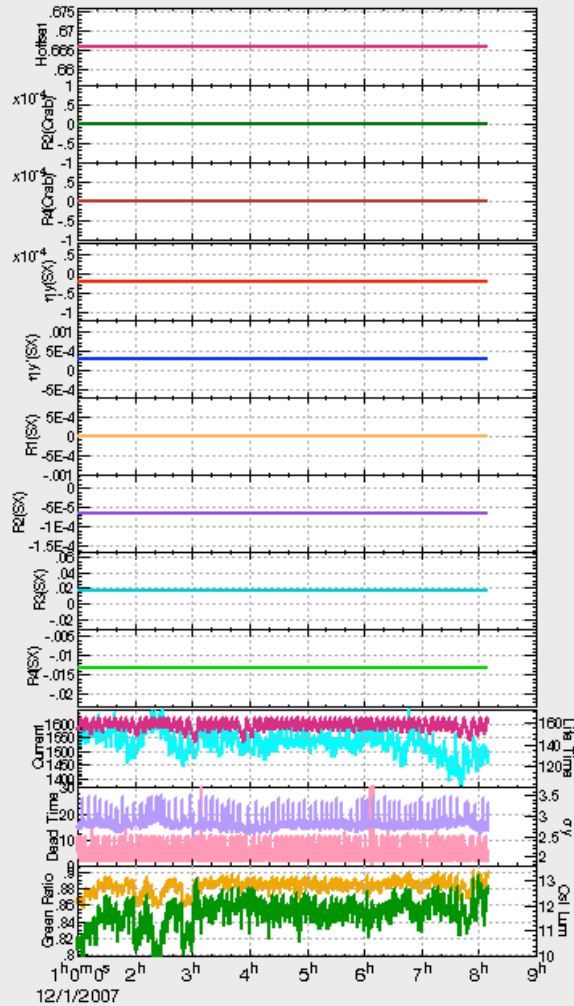
-6.6E-5 → -6.6E-5

R3(SX)

.016 → .016

R4(SX)

-.013 → -.013



HER

Hangle

0 → 0

R2(Crab)

0 → 0

R4(Crab)

0 → 0

$\eta y(SX)$

0 → 0

$\eta y'(SX)$

0 → 0

R1(SX)

0 → 0

R2(SX)

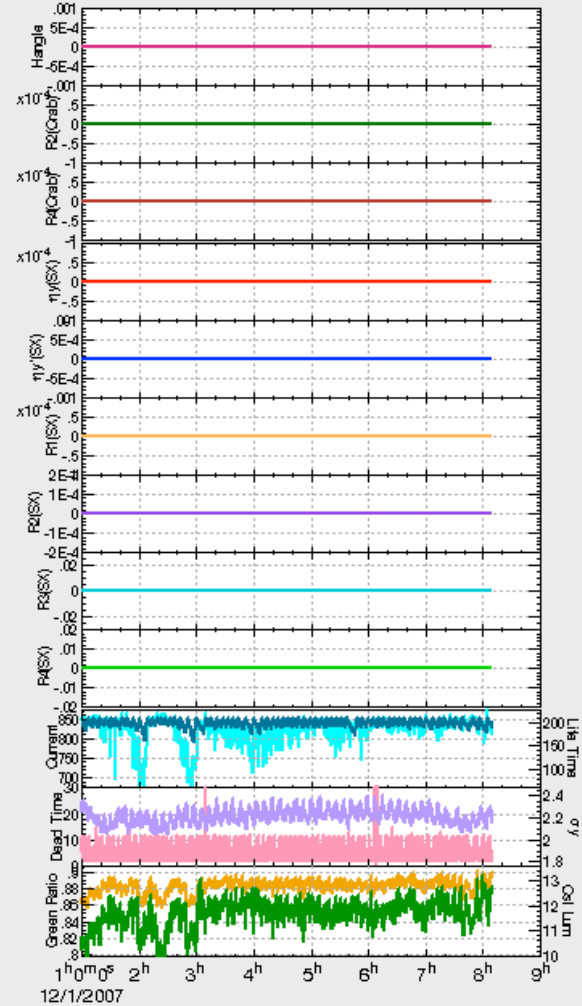
0 → 0

R3(SX)

0 → 0

R4(SX)

0 → 0



Lum_{Max}: 13.376

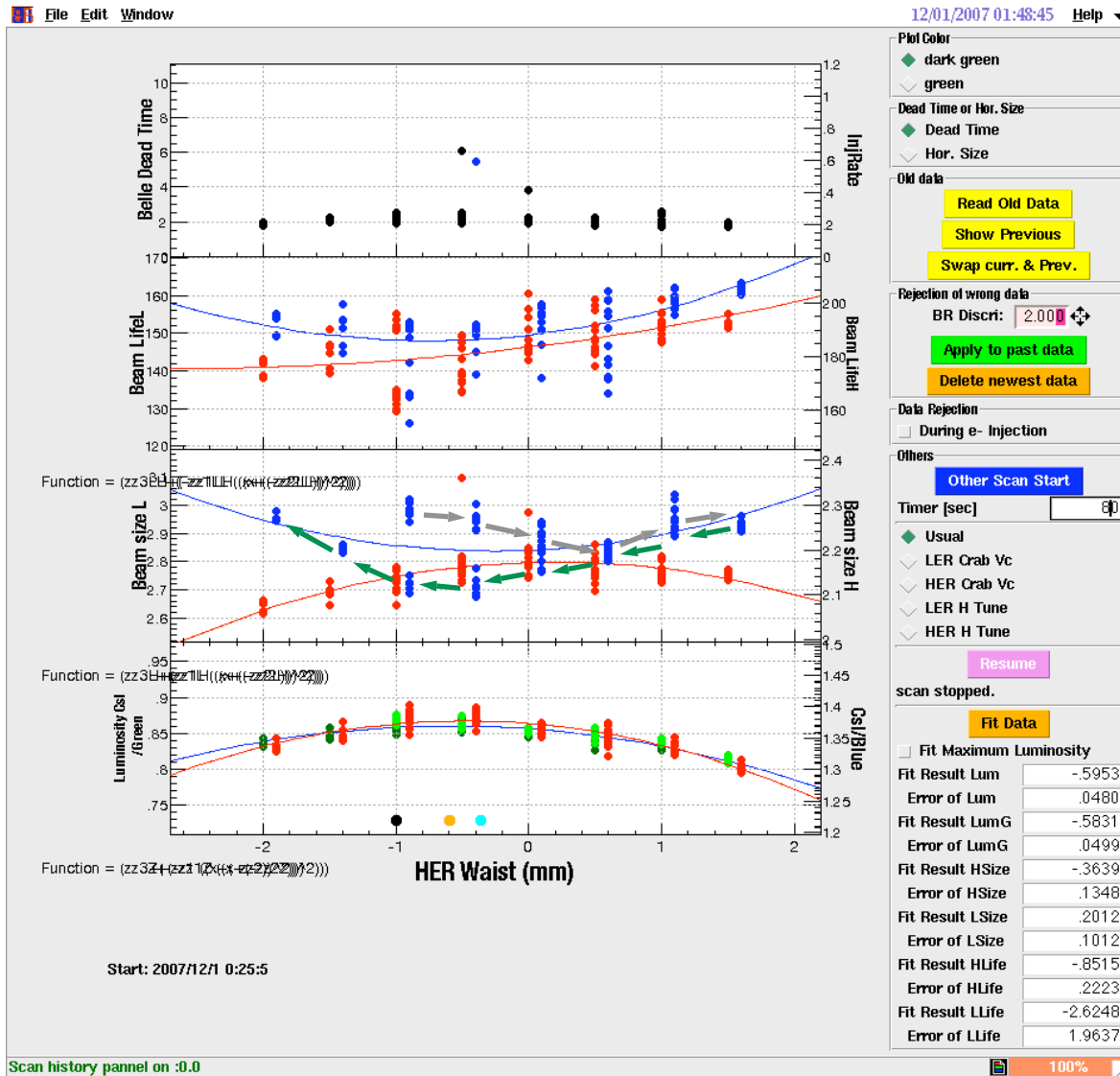
GR_{Max}: 89.49%

12/1/2007

12/1/2007

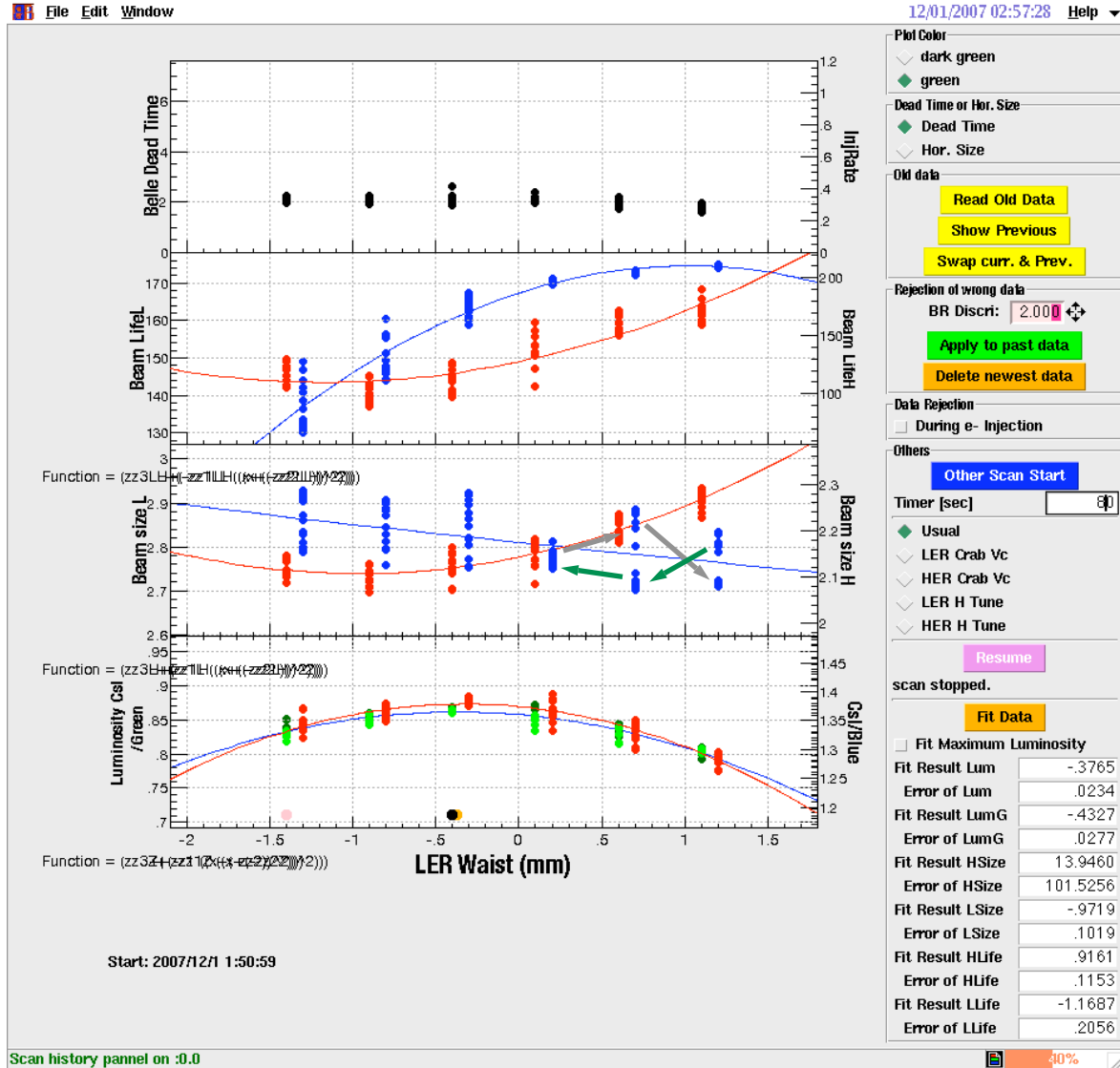
HER Waist Scan

The HER beam size response was unusual. It was dependent on

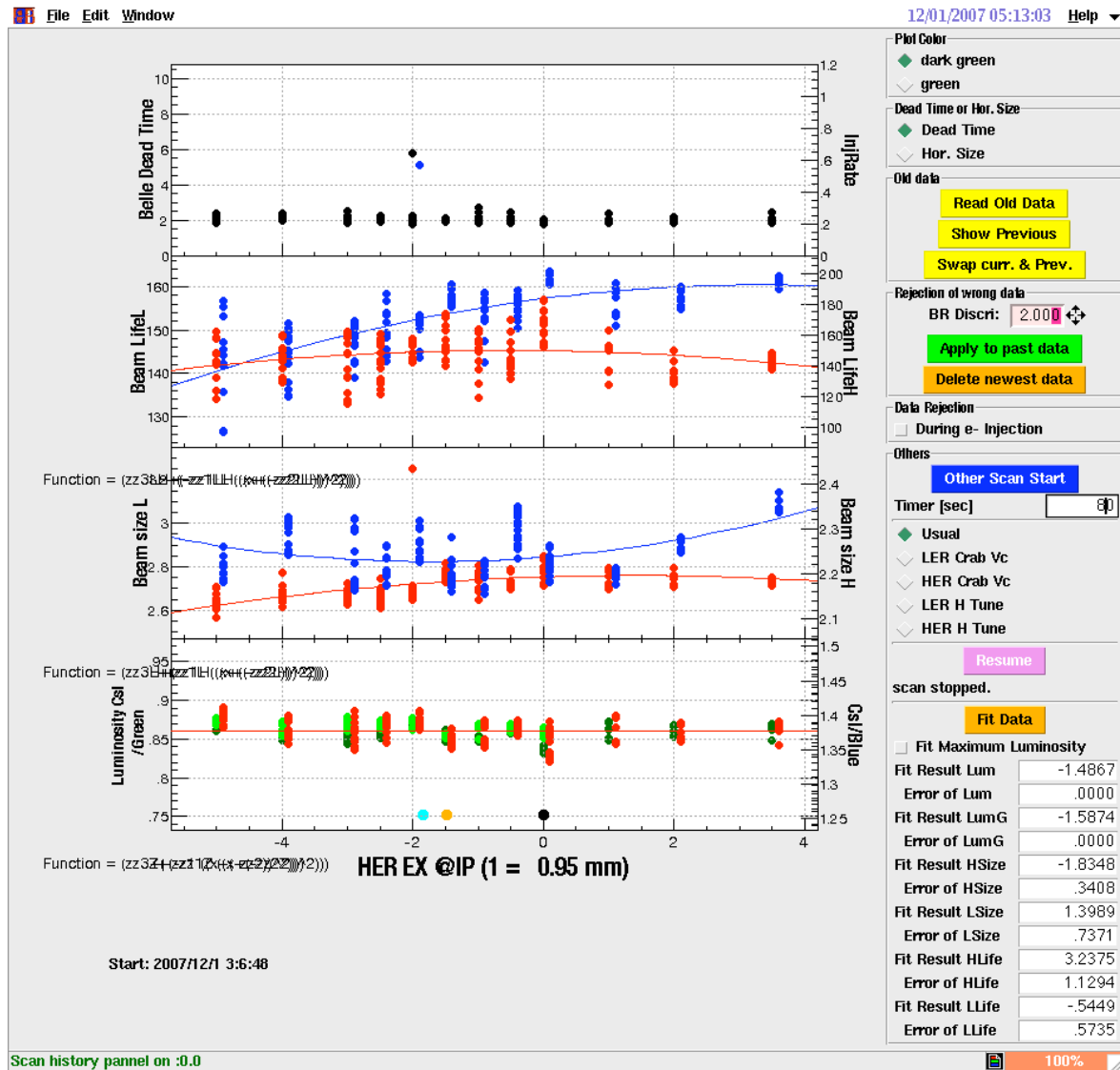


LER Waist Scan

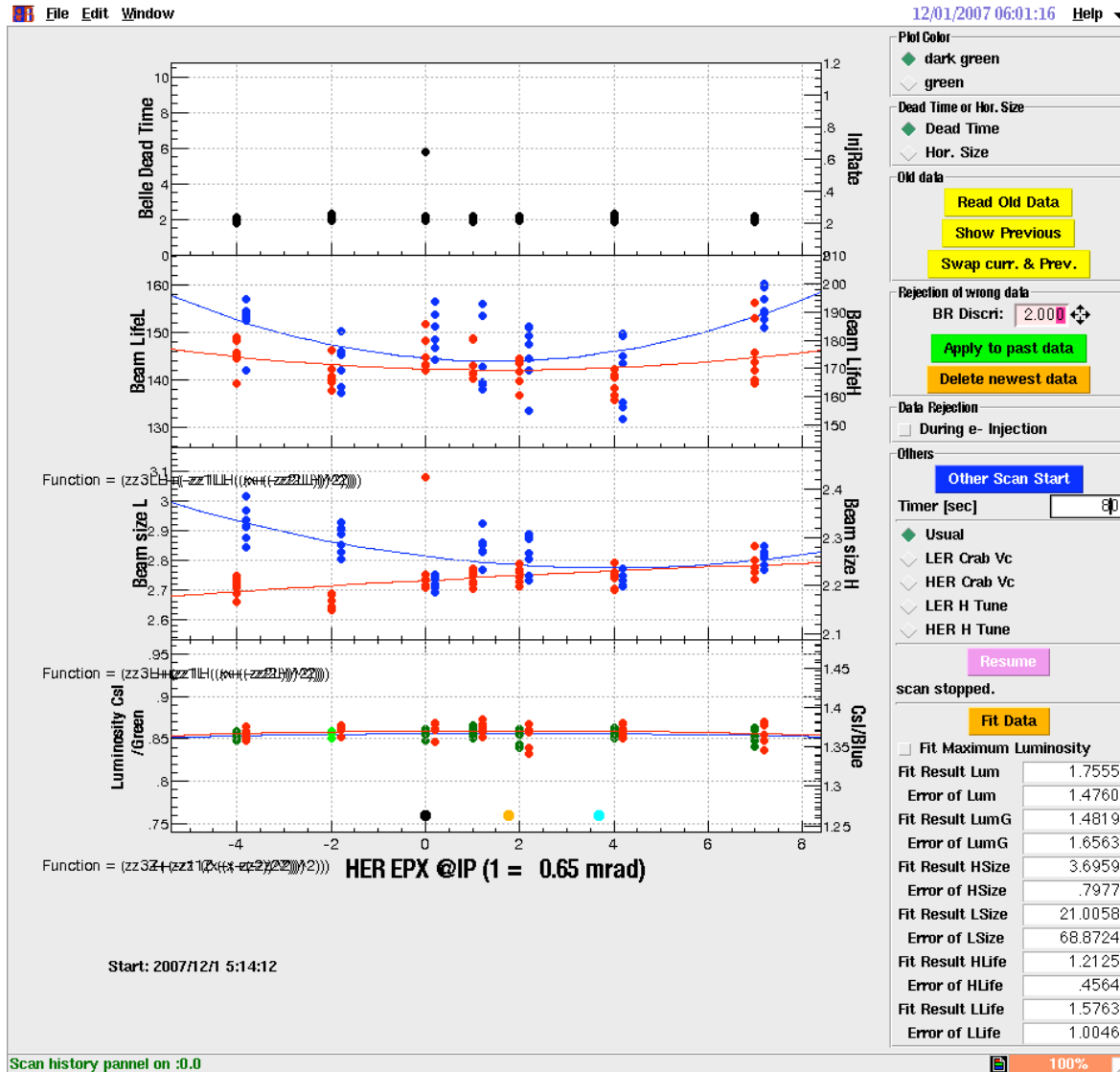
Also during LER Waist Scan,



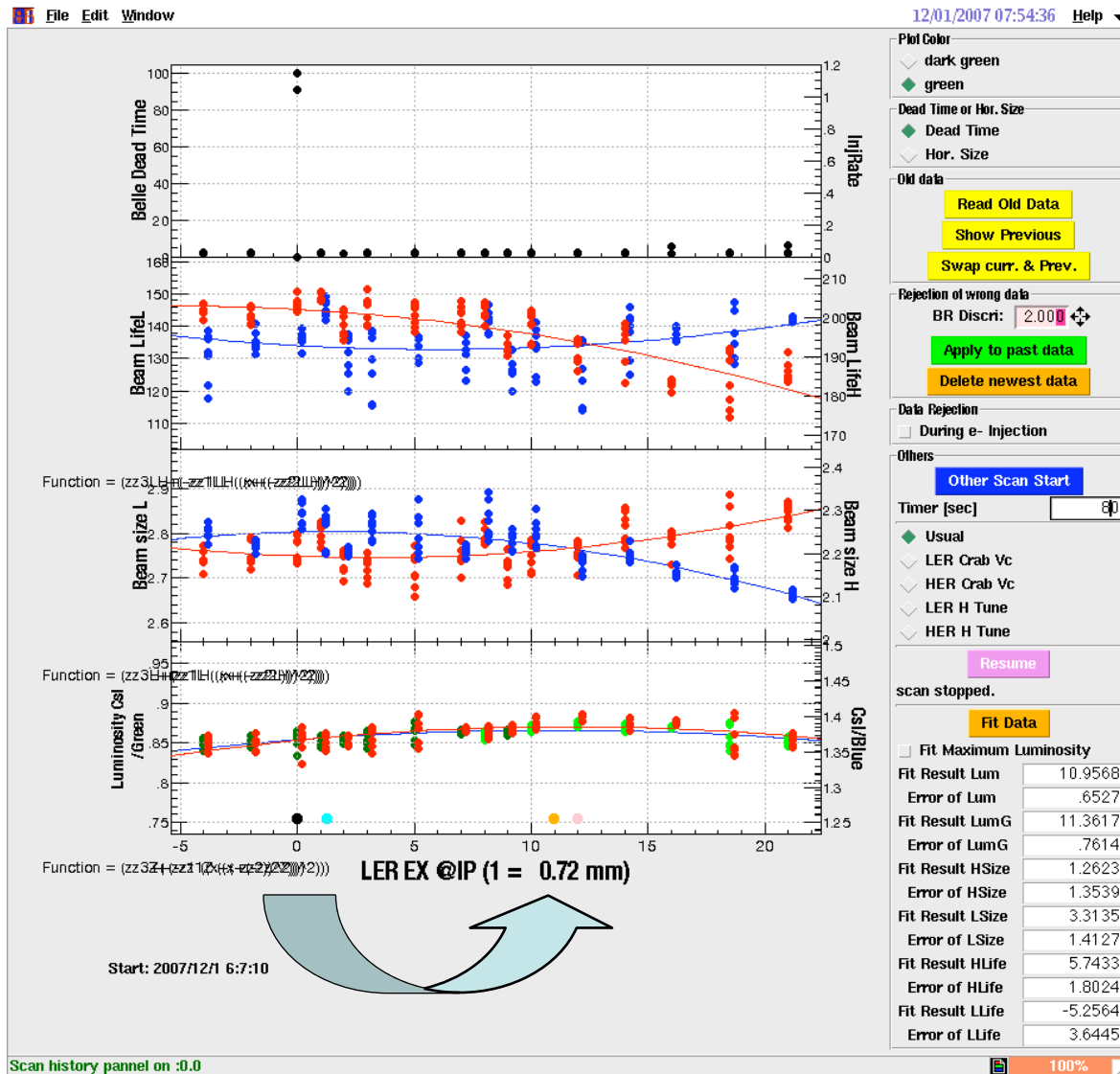
HER η_x @IP



HER η'_x @IP



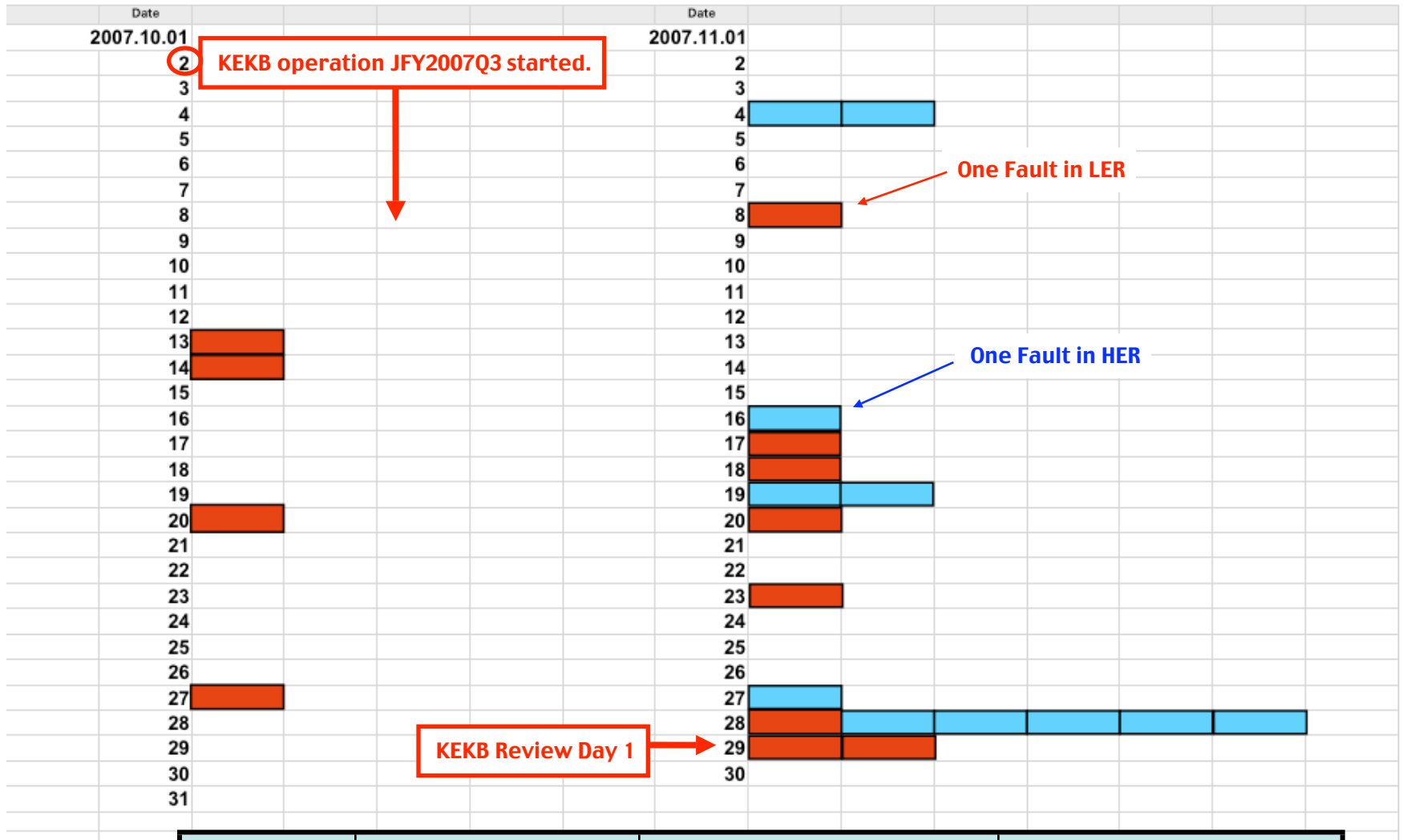
LER η_x @IP



Troubles

None

ARES Cavity Fault Stats (2007.10.02 ~ 2007.11.30)



	# of Cavities	Fault Rate (Oct.) / cavity/day	Fault Rate (Nov.) / cavity/day
LER	20	0.0067	0.013
HER	12	0	0.031

KeKB

A Gate into the High-Luminosity Frontier

KeKB Episodes (Season 1 from 1998 to 2008)

- 101 Runway 34L
- 102 Airborne
- 103 Heat Wave
- 104 Radio Silence
- 105 Spiral Summer
- 106 Out of Clouds
- 107 Tally Ho
- 108 The Ceiling
- 109 Check Your Six
- 110 Lost Contact
- 111 Cross Wind
- 112 Decision Height

We are here. →

KeKB Episodes (Season 2 from 2012?)

- 201 Wave Off
- 202...

Operationに関する感想、提案など

終わり