

KEKB Shift Report Date : 2007/12/1(Sat)

Day Shift : Yoshida (K); Noguchi,Watanabe,Fuke (M); Igarashi (B)

Knob Scan & Larger Simplex

予定

1. Horizontal Offset
2. Crab Tilt (R2/R4)
3. Larger Simplex

Peak \mathcal{L} / G-Ratio : **13.548** $\times 10^{33}$ **cm⁻²s⁻¹** / **90** %

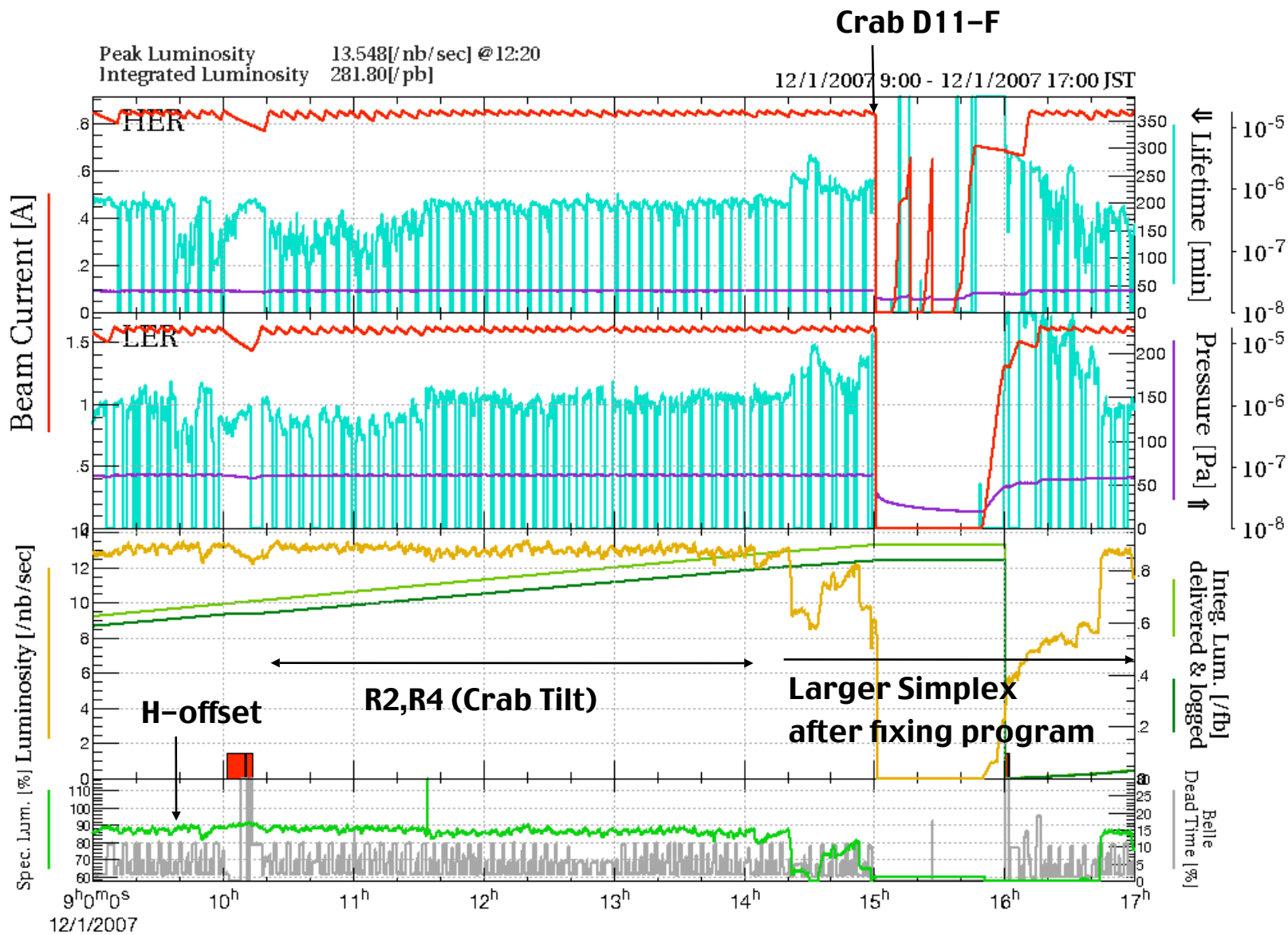
Shift \mathcal{L} : **281.8** **pb⁻¹**

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

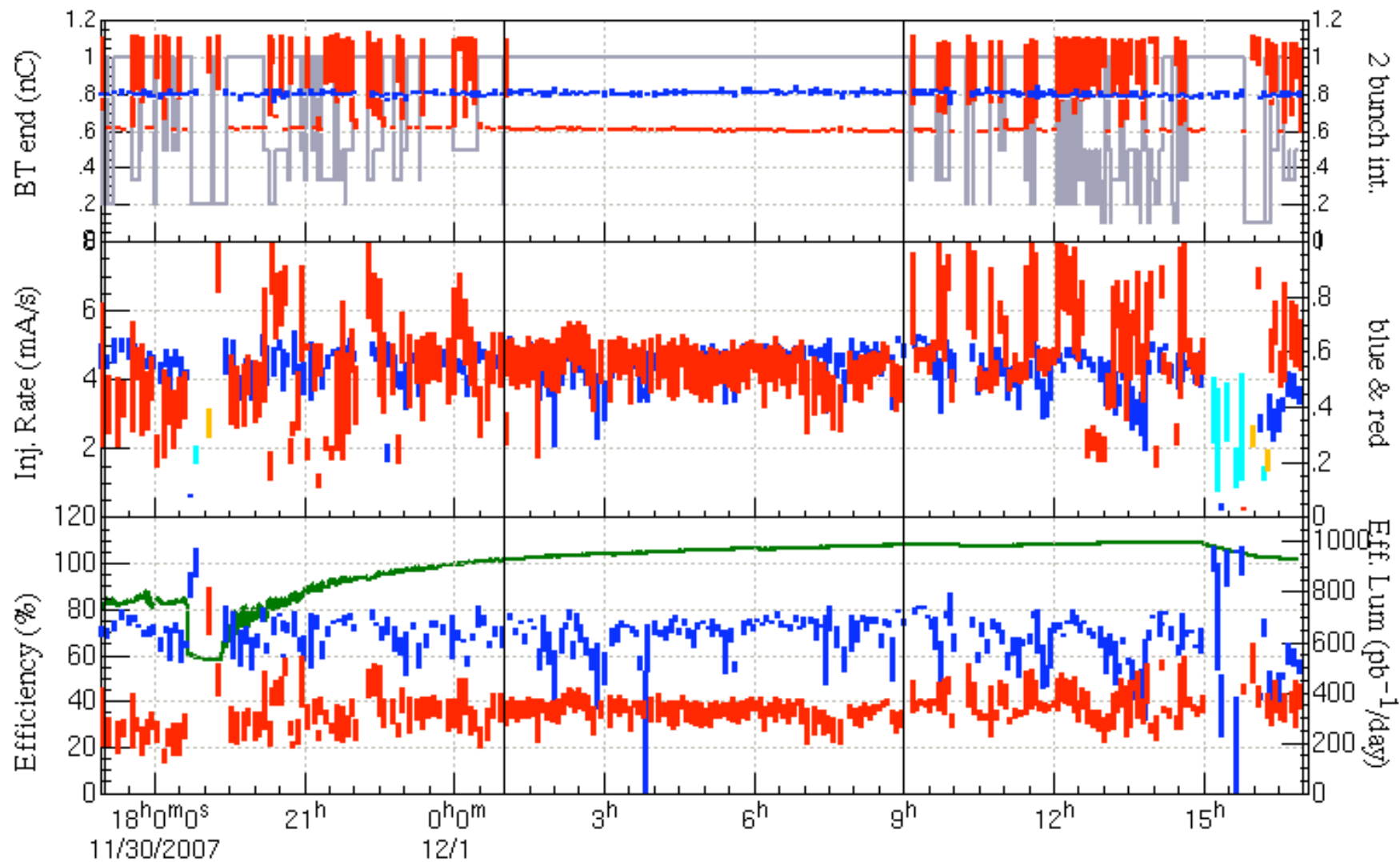
Fill pattern : 3.06 spacing, 1 trains, 1584+1 bunches

Aborts : LER_{only} : **0** / HER_{only} : **2** / Both : **1**

Shift Summary

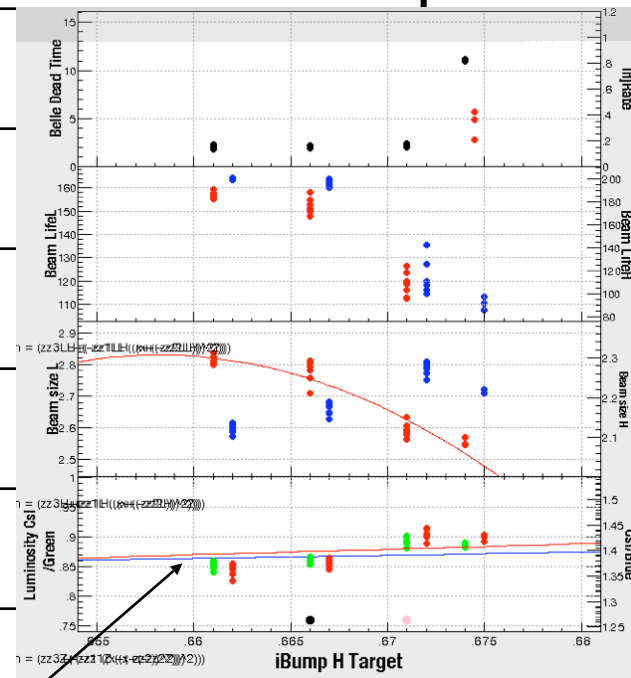


Injection Summary



Tuning Items

	LER	HER
R_1	1.2	
R_2		
R_3		
R_4		
η_y^*		
$\eta_y^{*'} $		
η_x^*		
$\eta_x^{*'} $	0 \rightarrow 18	
$R_2@Crab$	0 \rightarrow 1	0
$R_3@Crab$	0	1



Knob 1

LER

Room Phase
-19.98 → -20.11

Δf_{RF}
-9.04 → -12.03

Waist
-4 → -4

η_Y
.2 → .2

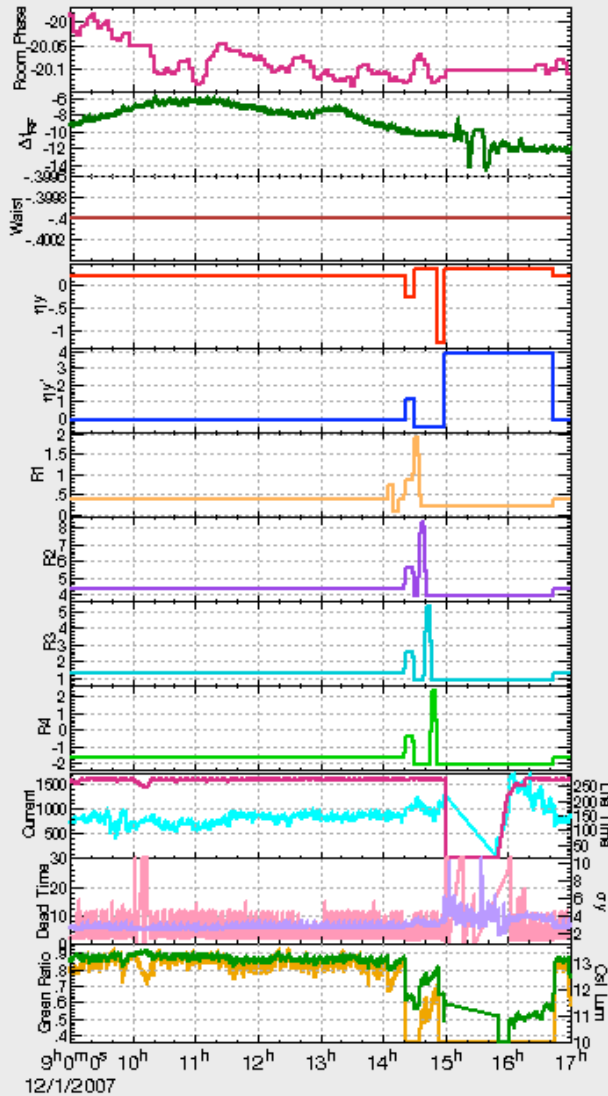
η_Y'
-.1 → -.1

R1
.4 → .4

R2
4.36 → 4.36

R3
1.31 → 1.31

R4
-1.65 → -1.65



HER

Voffset
-1.75 → -1.65

Vangle
-.555 → -.555

Waist
-.6 → -.6

η_Y
.91 → .91

η_Y'
-.18 → -.18

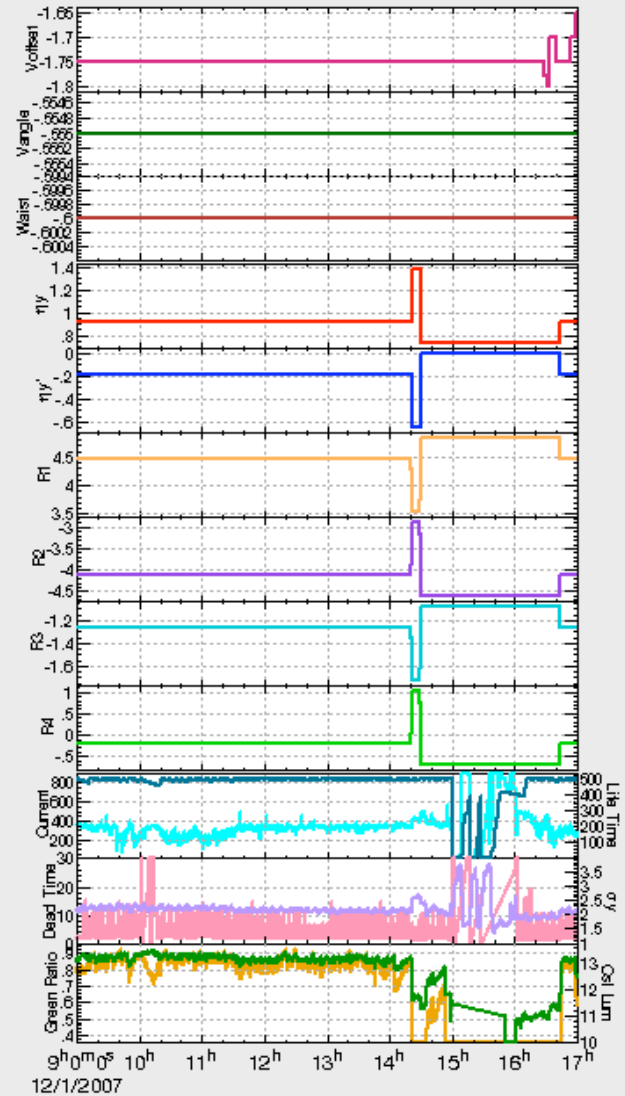
R1
4.47 → 4.47

R2
-4.13 → -4.13

R3
-1.26 → -1.26

R4
-.22 → -.22

Lum_{Max}: 13.548
GR_{Max}: 91.43%



Knob 2

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

$d_\delta \alpha'_x$

15.76 -> 15.76

$d_\delta \alpha'_y$

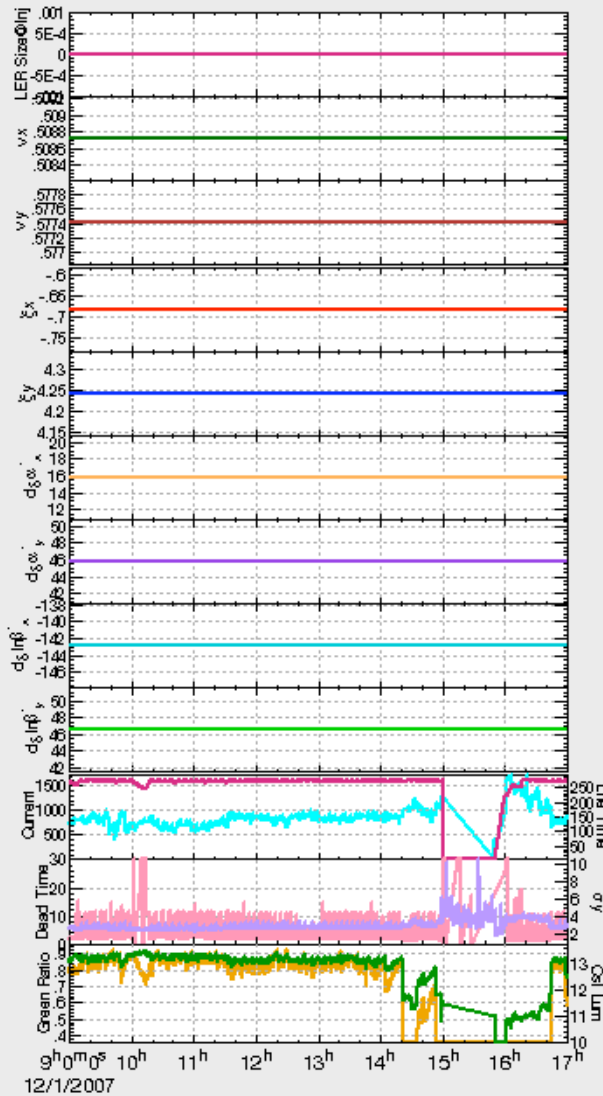
45.75 -> 45.75

$d_\delta \ln \beta'_x$

-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

$d_\delta \ln \beta'_x$

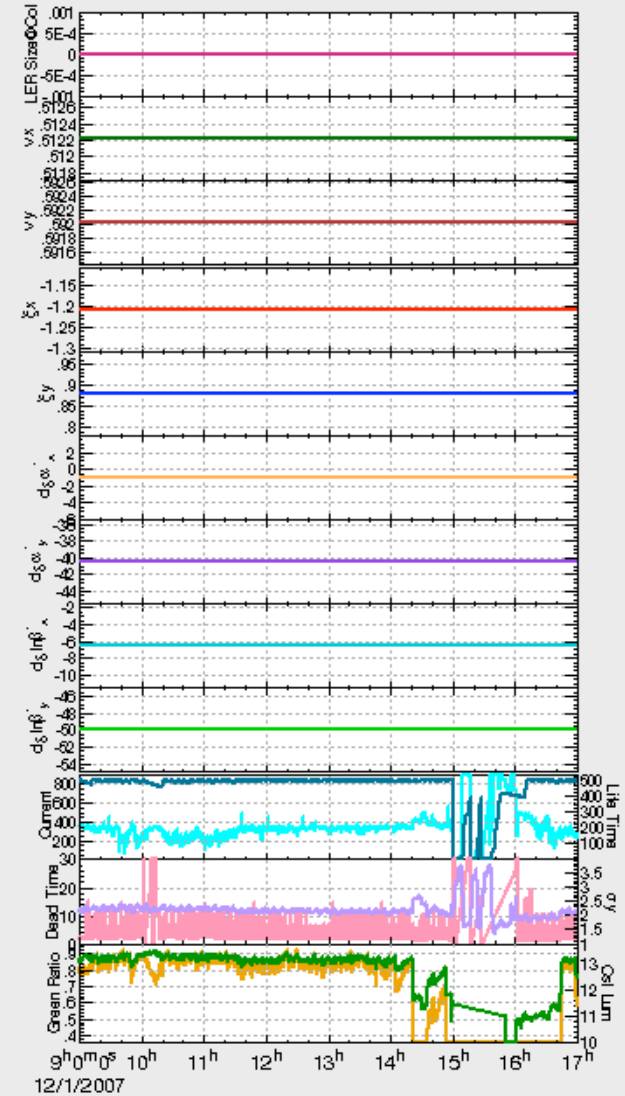
-6.55 -> -6.55

$d_\delta \ln \beta'_y$

-49.97 -> -49.97

Lum_{Max}:13.548

GR_{Max}:91.43%



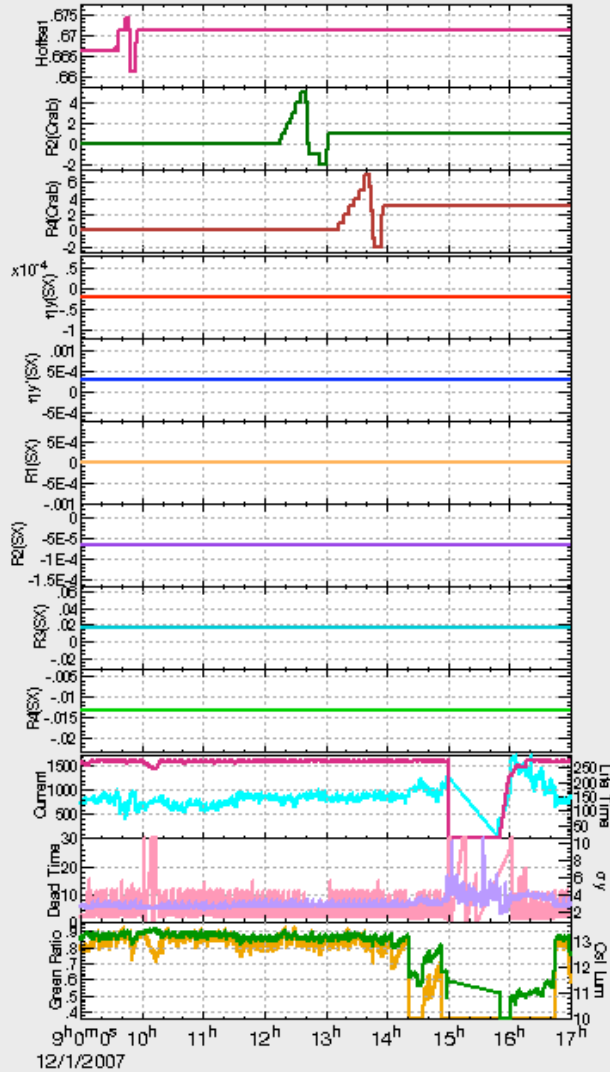
Knob 3

LER

Offset
 .666 -> .671
R2(Crab)
 0 -> 1
R4(Crab)
 0 -> 3

 $\eta\gamma$ (SX)
 $-2.2E-5 \rightarrow -2.2E-5$
 $\eta\gamma'$ (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)
 $-.013 \rightarrow -.013$



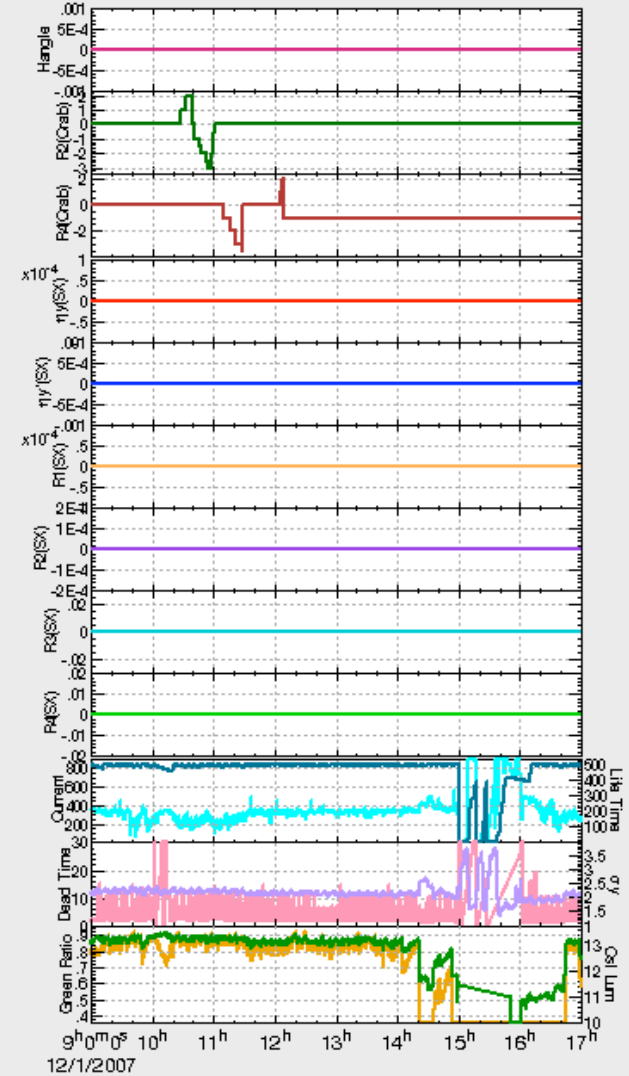
HER

Handle
 0 -> 0
R2(Crab)
 0 -> 0
R4(Crab)
 0 -> -1

 $\eta\gamma$ (SX)
 0 -> 0
 $\eta\gamma'$ (SX)
 0 -> 0

R1(SX)
 0 -> 0
R2(SX)
 0 -> 0
R3(SX)
 0 -> 0
R4(SX)
 0 -> 0

Lum_{Max}: 13.548
GR_{Max}: 91.43%



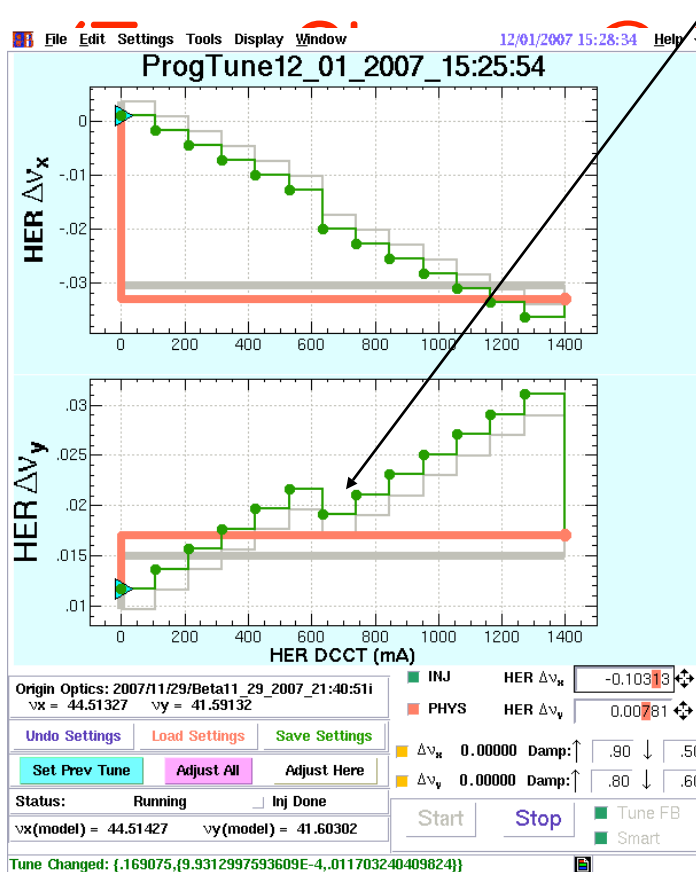
Comments

Troubles

1. 15:00 HER Abort (Crab D11-F) → LER Abort

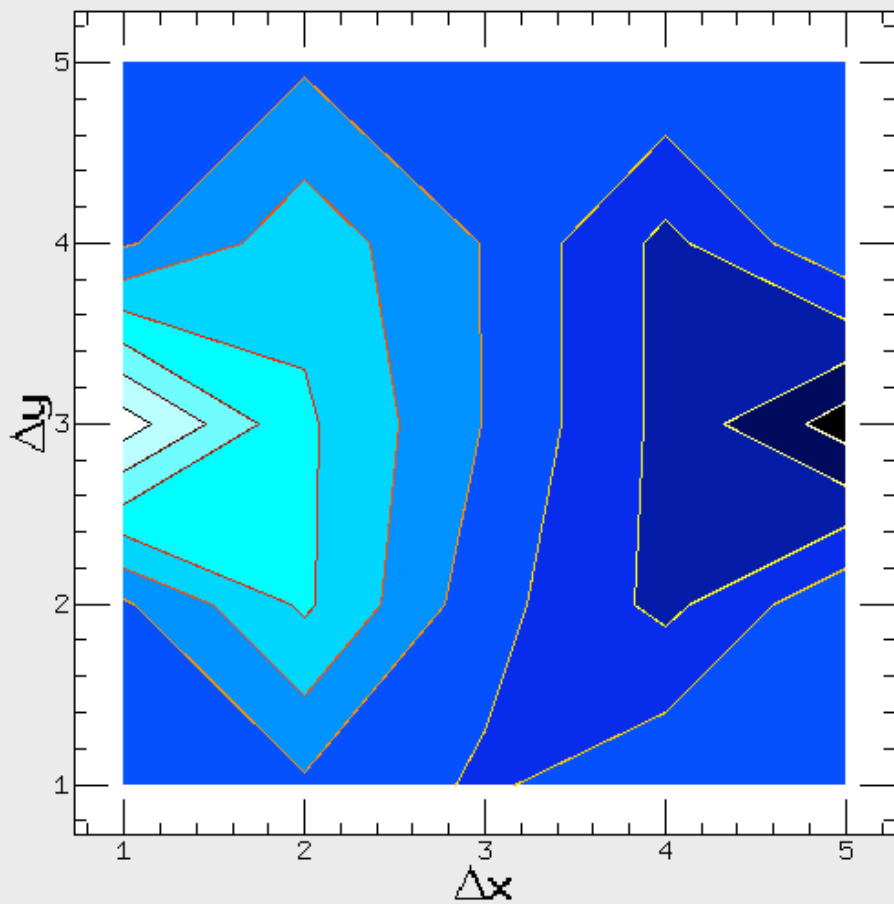
2. 15:16 / 15:26 HER Abort

350mA → Belle Abort)



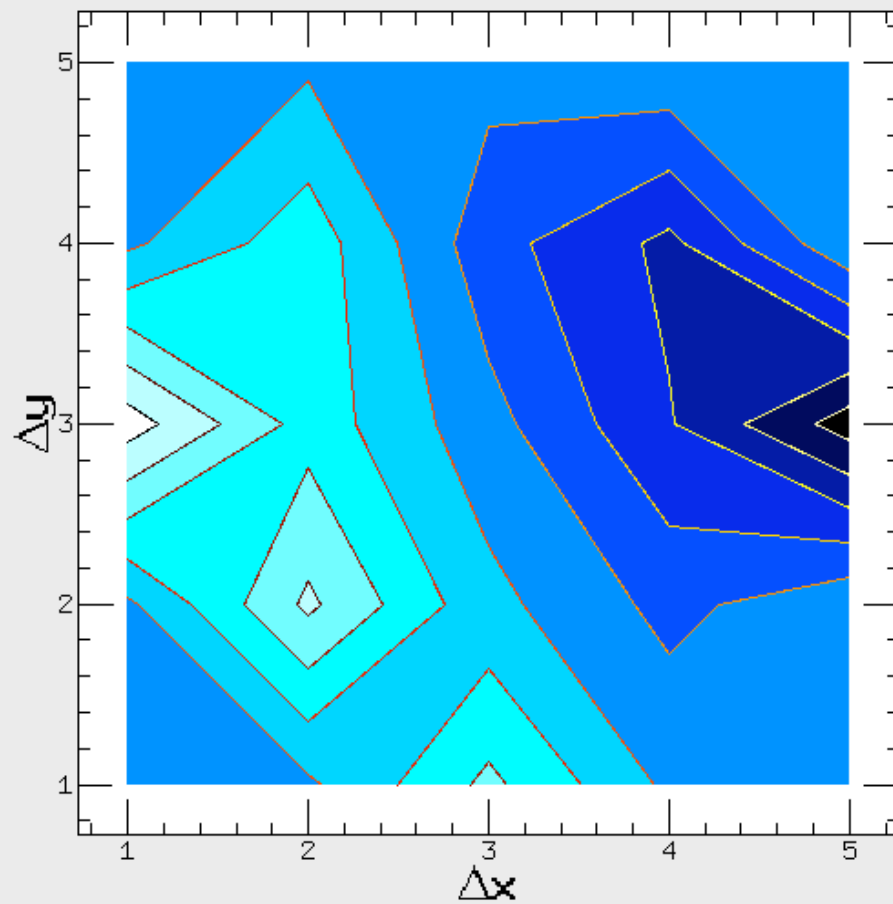
min = .5249 max = .5267

v_x



min = .6026 max = .6057

v_y



終わり

KEKB Shift Report Date : 2007/12/1(Sat.)

Evening Shift : Y.Yamamoto, Suetsugu (K); M.Tanaka, Ohkubo

Simplex scan proceeded steadily, but not yet converged...

Plan

1. Continue simplex knob scan (Luminosity max. mode)

Peak \mathcal{L} / G-Ratio : **13.399** $\times 10^{33}$ **cm⁻²s⁻¹** / **89** %

Shift \mathcal{L} / Day \mathcal{L} : **284.3** **pb⁻¹** / **912.5** **pb⁻¹**

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

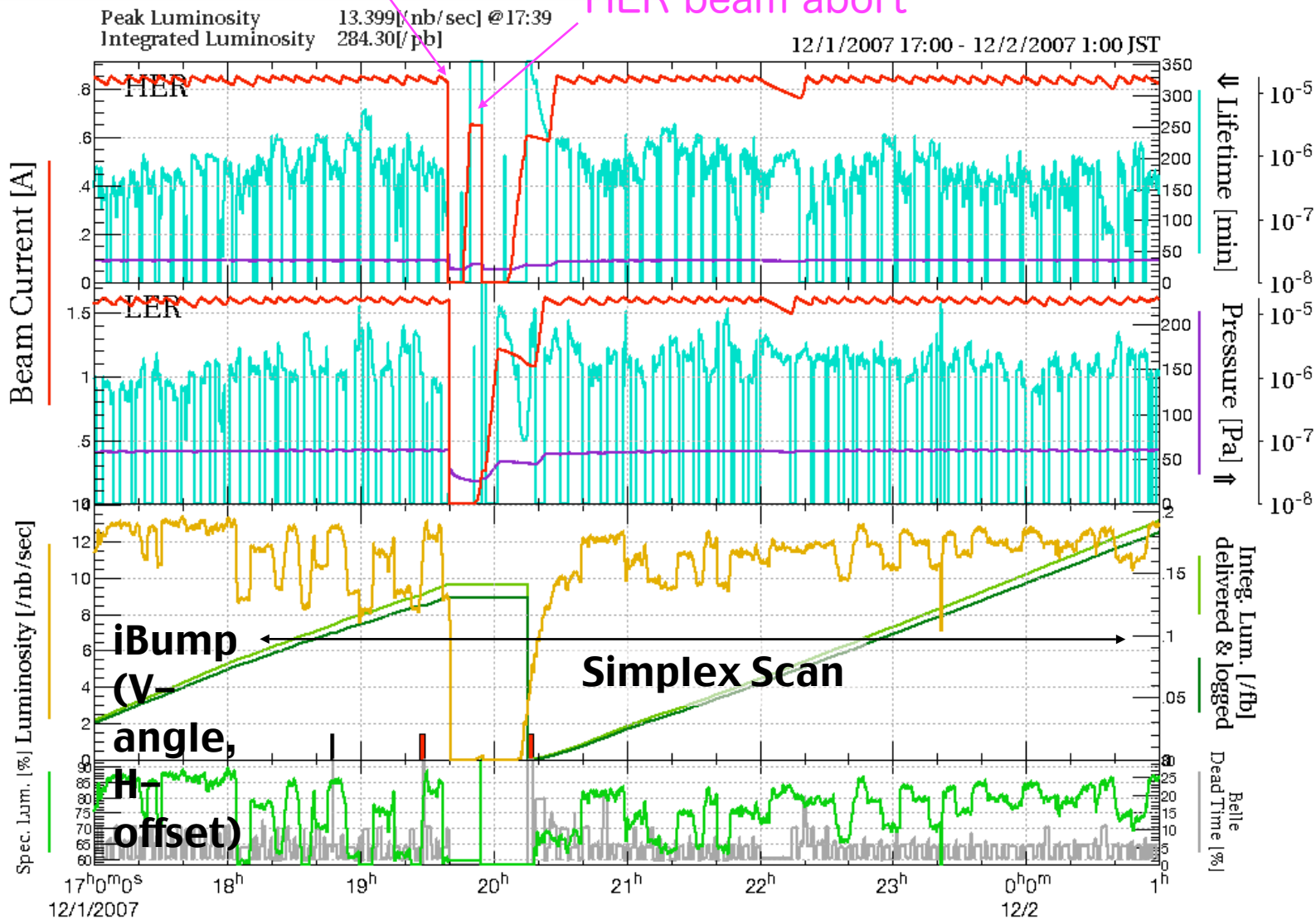
Fill pattern : 3.06spacing, 1 trains, 1584+1 bunches

Aborts : LER_{only} : **1** / HER_{only} : **2** / Both : **0**

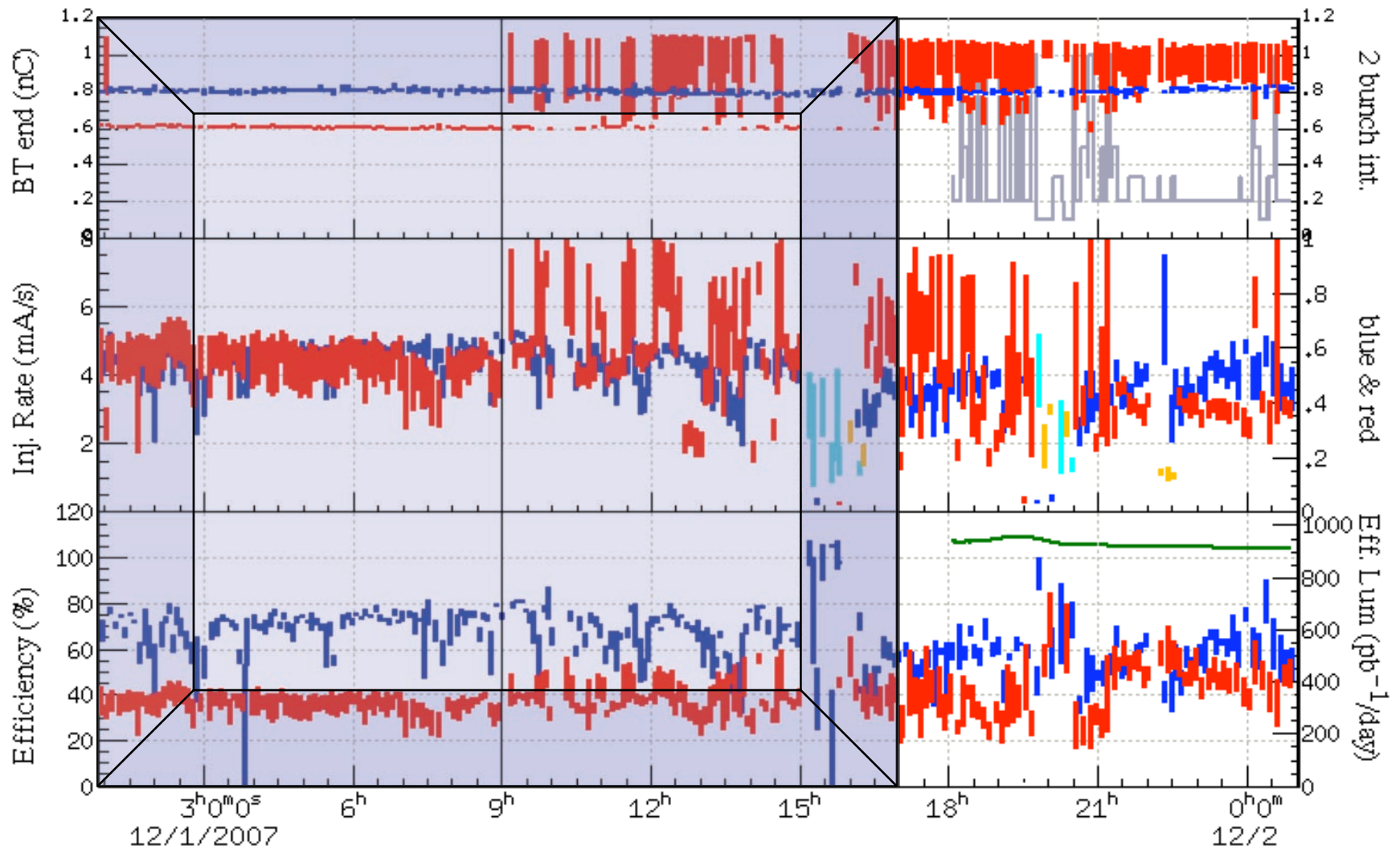
Shift Summary

HER beam abort followed by LER

HER beam abort



Injection Summary



Tuning Items

- Simplex Scan in Luminosity maximize mode
- LER H-Tune +0.0004; to fill bunches at the head of bunch train. Little change in luminosity.

Knob 1

LER

Room Phase

-20.11 -> -19.88

Δf_{RF}

-12.03 -> -6.14

Waist

-.4 -> -.4

η_y

.2 -> .09

η_y'

-.1 -> .17

R1

.4 -> .54

R2

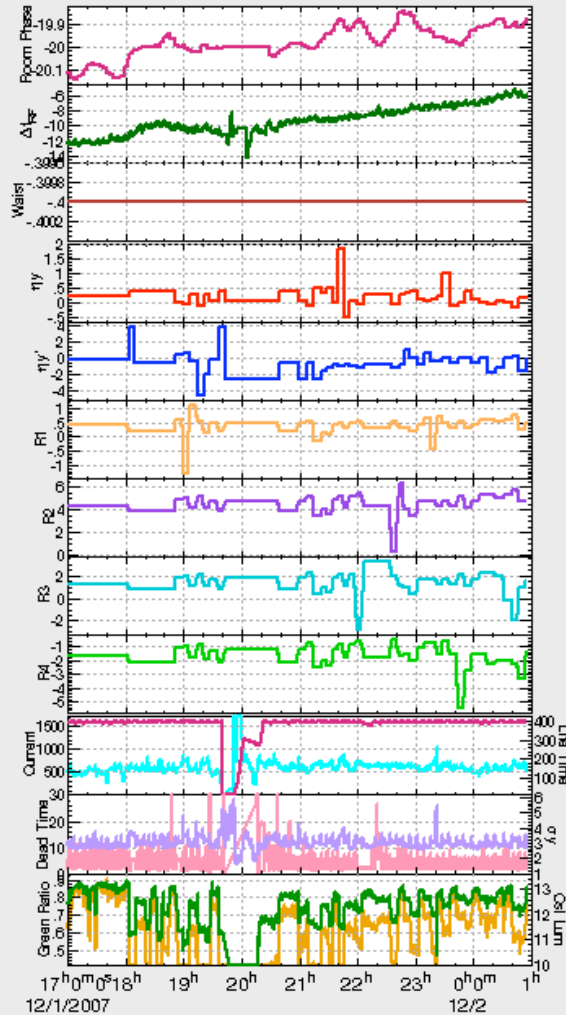
4.36 -> 4.81

R3

1.31 -> 1.56

R4

-1.65 -> -1.36



HER

Voffset

-1.65 -> -1.74

Vangle

-.555 -> -.56

Waist

-.6 -> -.6

η_y

.91 -> .67

η_y'

-.18 -> .53

R1

4.47 -> 4.17

R2

-4.13 -> -4.27

R3

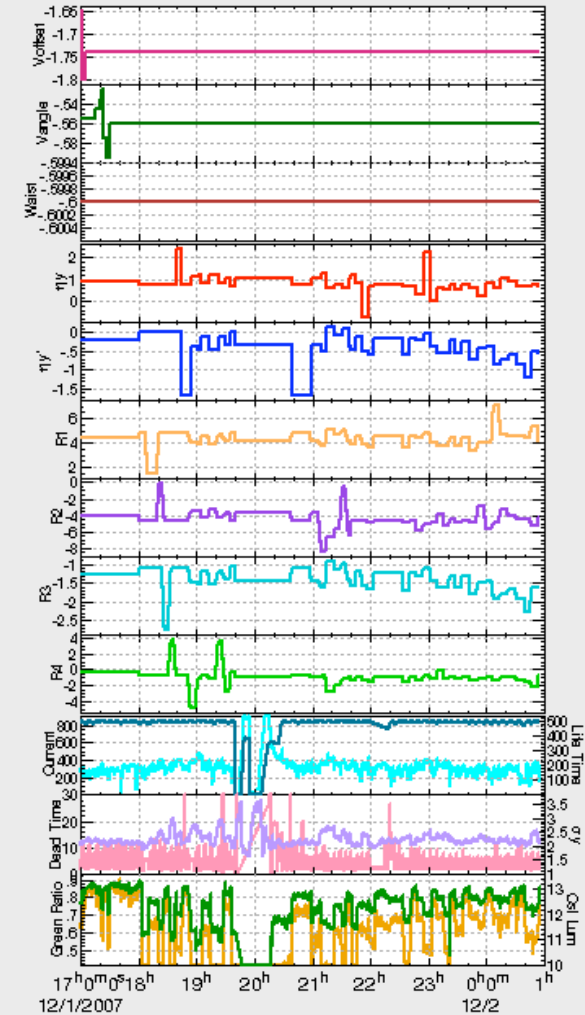
-1.26 -> -1.61

R4

-.22 -> .68

Lum_{Max}: 13.399

GR_{Max}: 89.32%



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

Knob 2

LER

LER Size@Inj

0 -> 0@0A

v_x @0A

.5087 -> .5091

v_y @0A

.5774 -> .5774

ξ_x

-.684 -> -.684

ξ_y

4.243 -> 4.243

$d_\delta \alpha_x^*$

15.76 -> 15.76

$d_\delta \alpha_y^*$

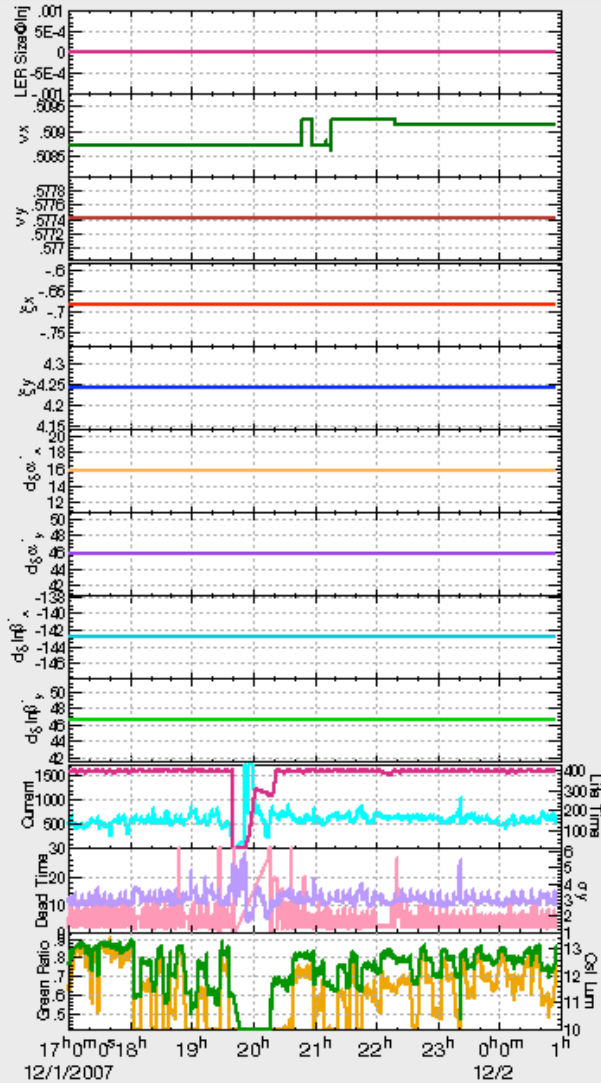
45.75 -> 45.75

$d_\delta \ln \beta_x^*$

-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

$d_\delta \ln \beta_x^*$

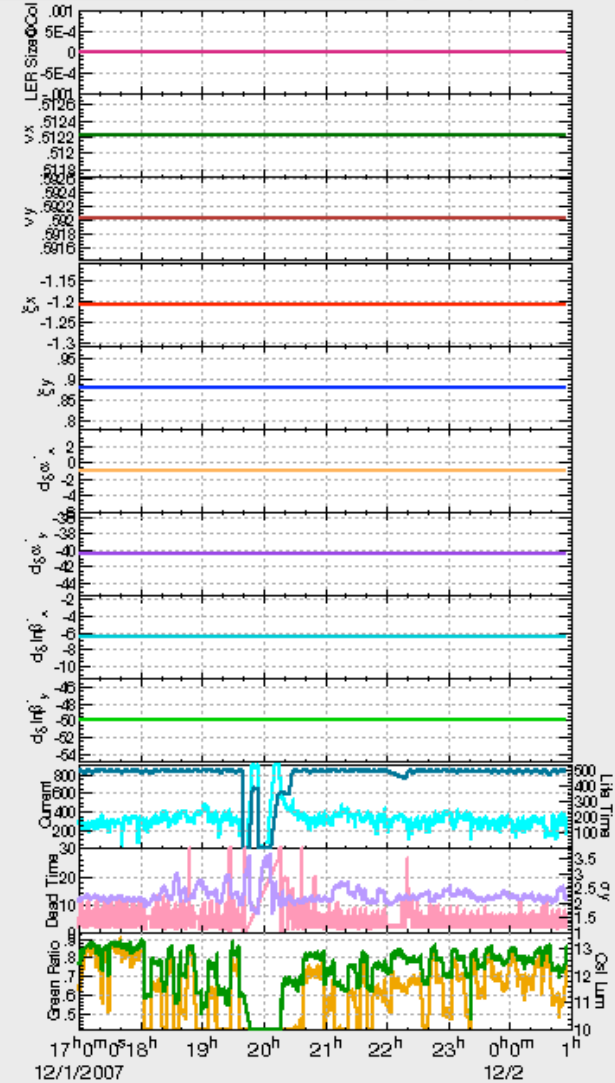
-6.55 -> -6.55

$d_\delta \ln \beta_y^*$

-49.97 -> -49.97

Lum_{Max}:13.399

GR_{Max}:89.32%



Knob 3

LER

Offset

.671 -> .669

R2(Crab)

1 -> 1

R4(Crab)

3 -> 3

ηy (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)

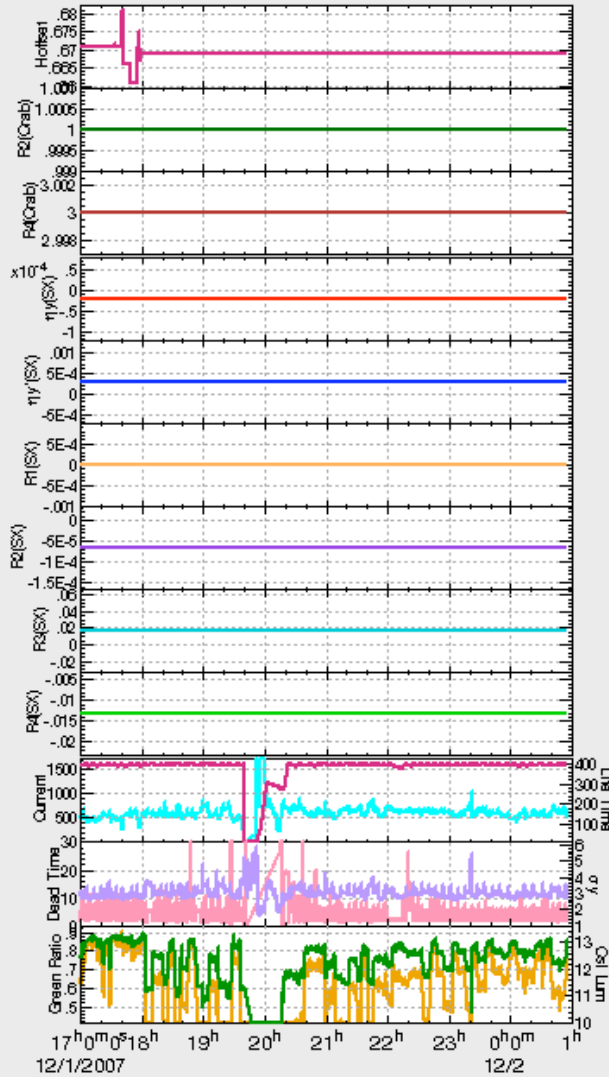
-6.6E-5 -> -6.6E-5

R3(SX)

.016 -> .016

R4(SX)

-.013 -> -.013



HER

Hangle

0 -> 0

R2(Crab)

0 -> 0

R4(Crab)

-1 -> -1

ηy (SX)

0 -> 0

$\eta y'$ (SX)

0 -> 0

R1(SX)

0 -> 0

R2(SX)

0 -> 0

R3(SX)

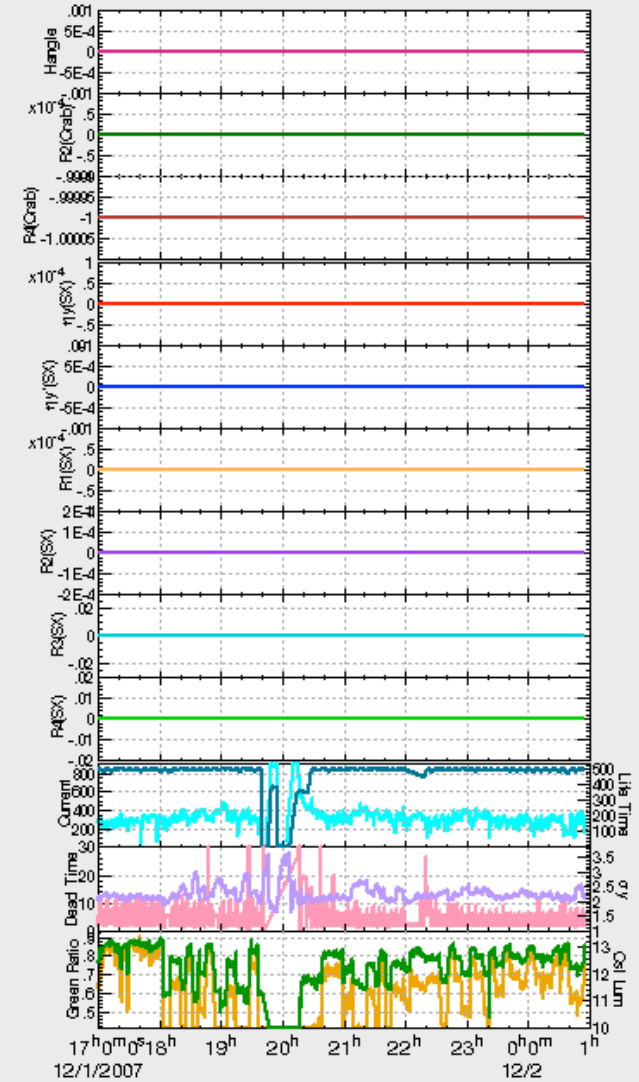
0 -> 0

R4(SX)

0 -> 0

Lum_{Max}:13.399

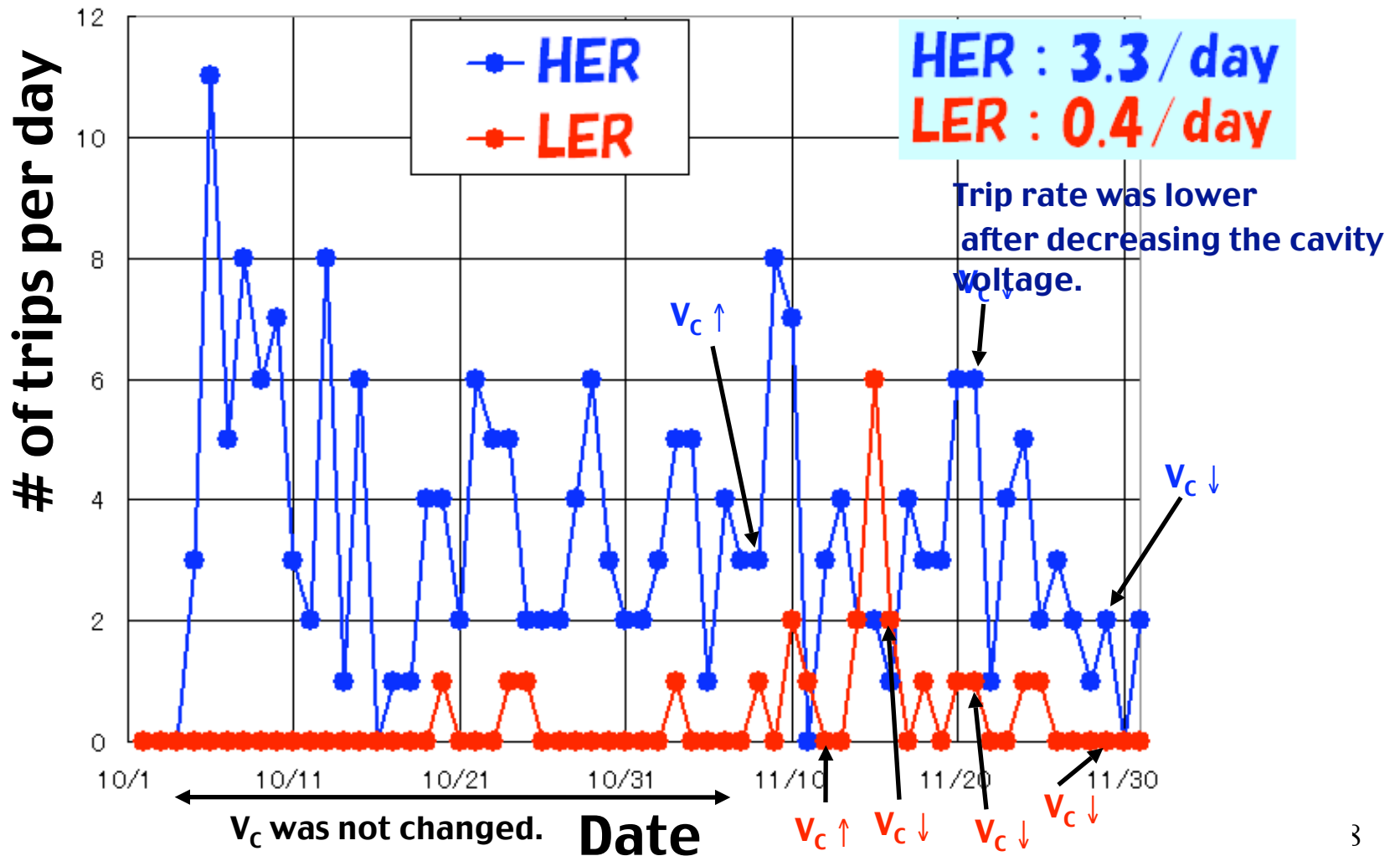
GR_{Max}:89.32%



Comments

1. Trip rate for Crab cavities is dependent on the cavity voltage.

of Trip Counts for Crab Cavity in 2007 Autumn



Troubles

1. 19:39 HER Beam Abort; HER crab cavity break down (Pressure burst in cavity).

The beam abort seemed to induce LER beam abort just few second later.

2. 19:55 HER Beam Abort; D11-D cavity break down (Discharge in cavity).

Operationに関する感想、提案など

終わり

KEKB Shift Report Date : 2007/12/2(Sun)

Morning Shift : Shibata (K); Aoyama, Shimodome (M); Hazumi (B)

HER Abort Kicker Thermometer Trouble

Plan

1. Simplex Knob Scan (Lumi. Max. mode) ○
2. Knob 1 Scan ×

Peak \mathcal{L} / G-Ratio : **13.668** × **10³³ cm⁻²s⁻¹** / **90** %

Shift \mathcal{L} / Day \mathcal{L} : **244.0+ α pb⁻¹** / **000.0 pb⁻¹**

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

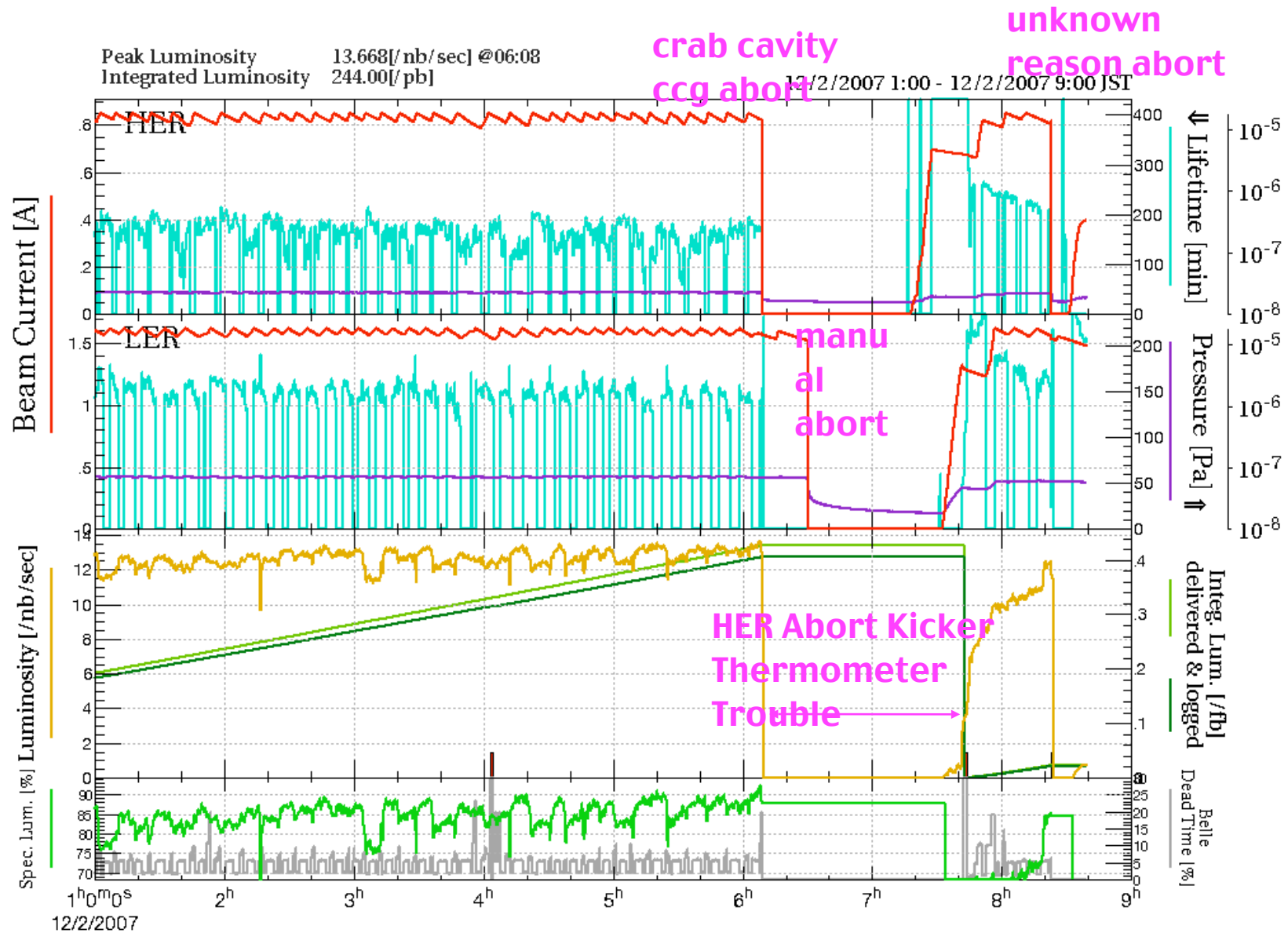
Fill pattern : 3.06 spacing, 1 trains, 1584+1 bunches

Aborts : LER_{only} : **1** / HER_{only} : **2** / Both : **0**

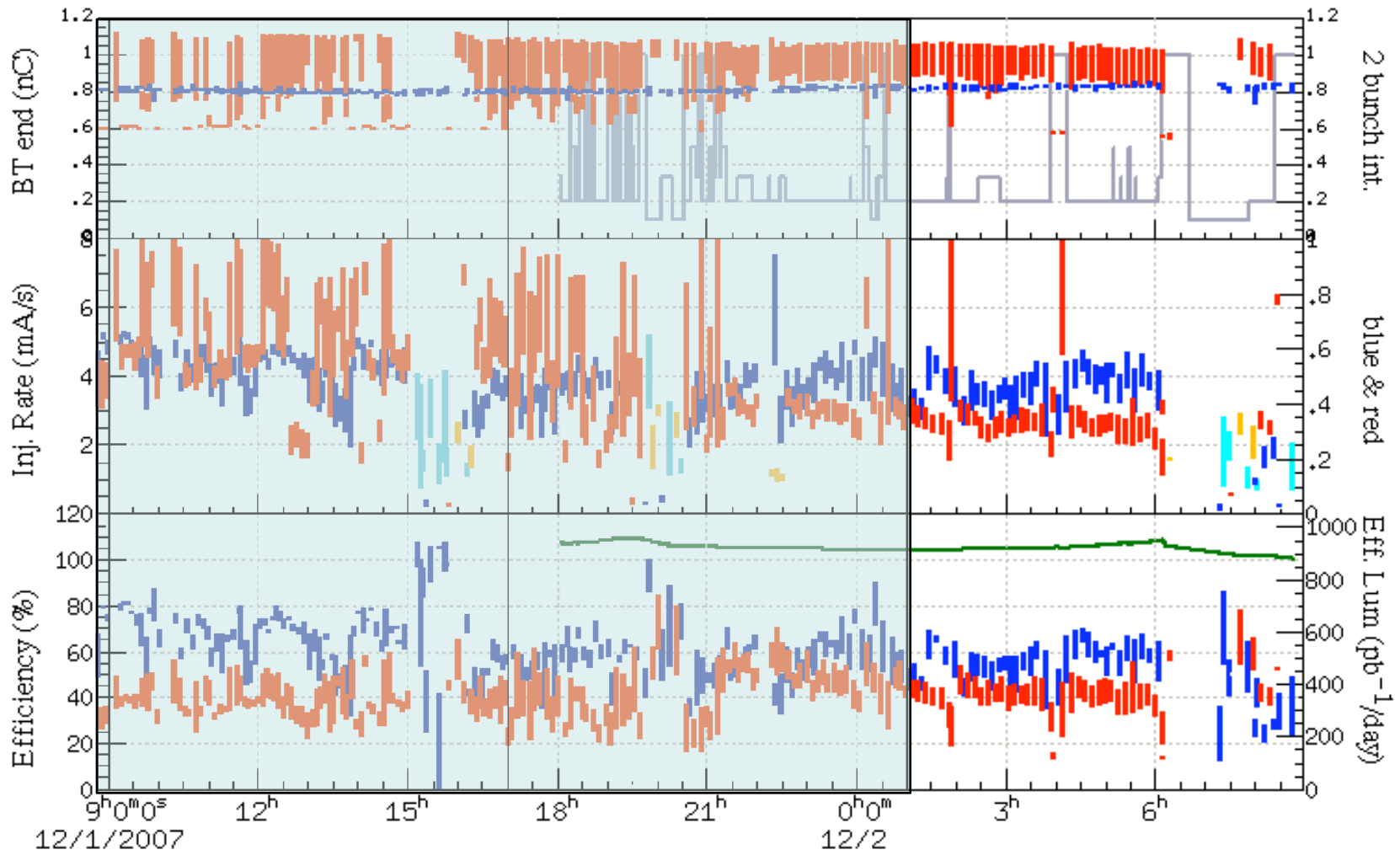
manual

crab cavity ccg

Shift Summary

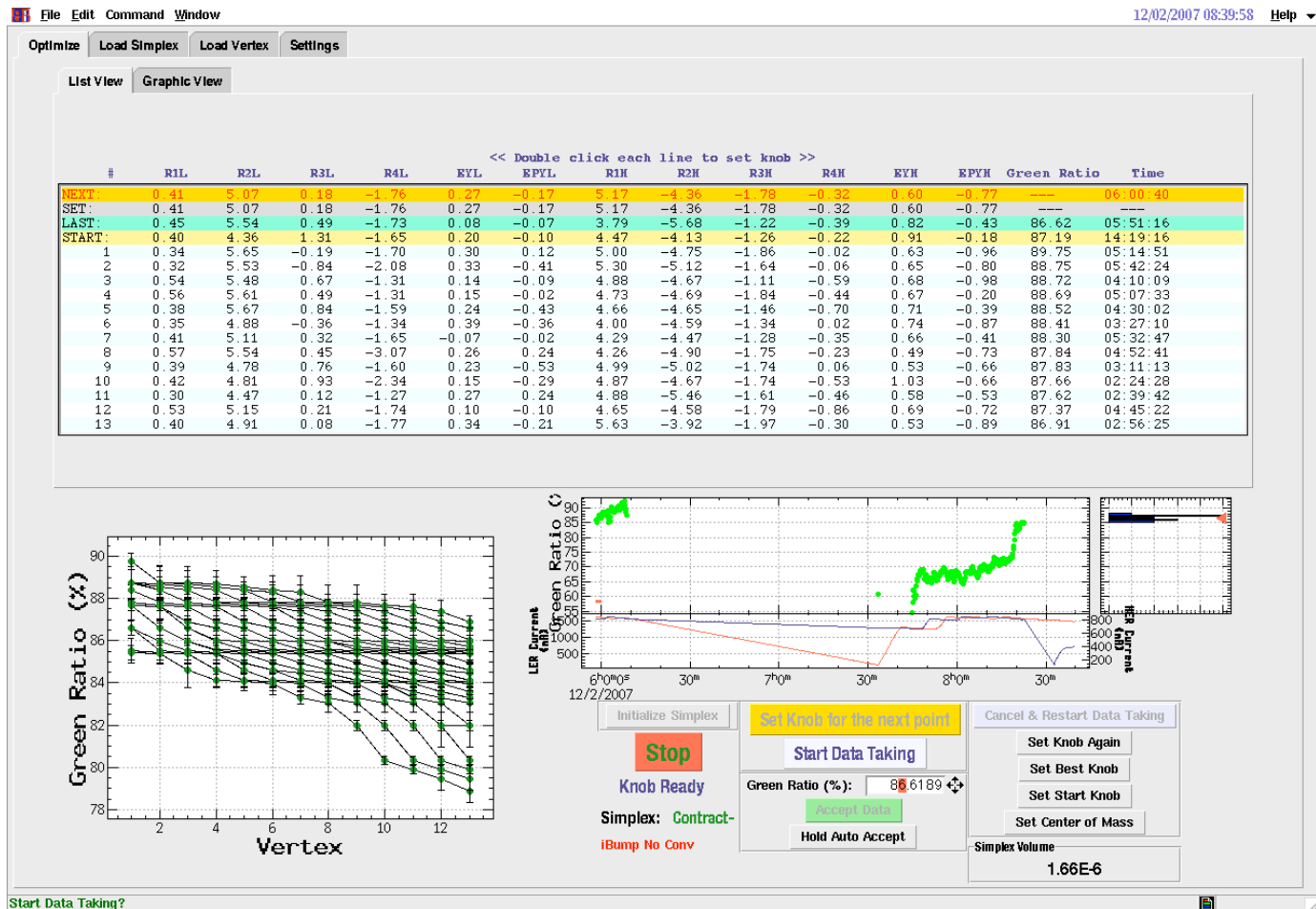


Injection Summary



Tuning Items

- Simplex Scan in Luminosity Maximize mode
- It seems that green ratio has not converged yet.



Knob 1

LER

Room Phase
-19.85 -> -19.87

Δf_{RF}
-6.45 -> -5.77

Waist
-.4 -> -.4

η_y
.09 -> .27

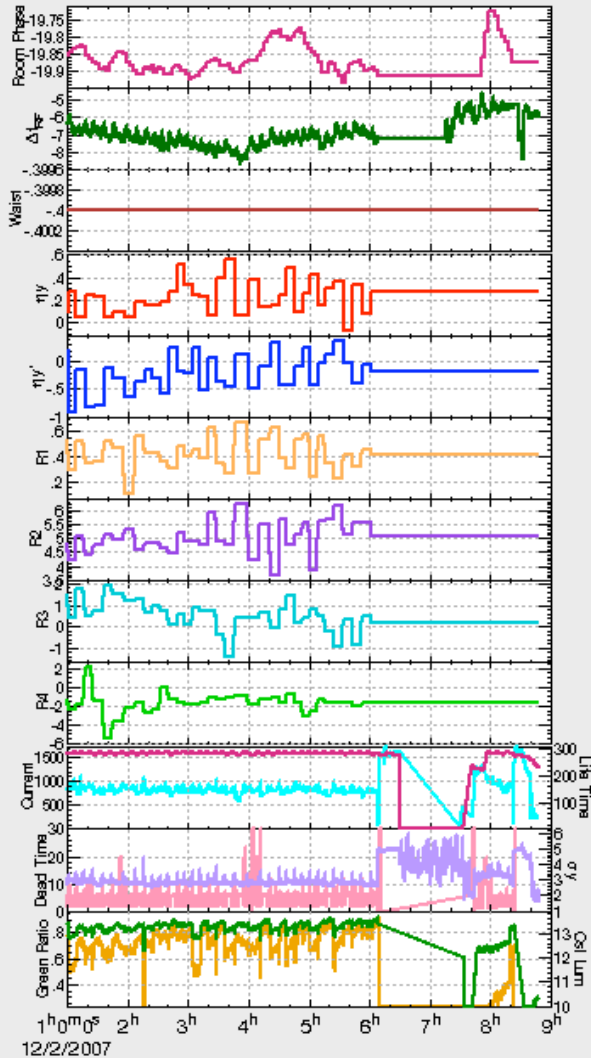
η_y'
.17 -> -.17

R1
.54 -> .41

R2
4.81 -> 5.07

R3
1.56 -> .18

R4
-1.36 -> -1.76



12/2/2007

HER

Voffset
-1.74 -> -1.74

Vangle
-.56 -> -.56

Waist
-.6 -> -.6

η_y
.67 -> .6

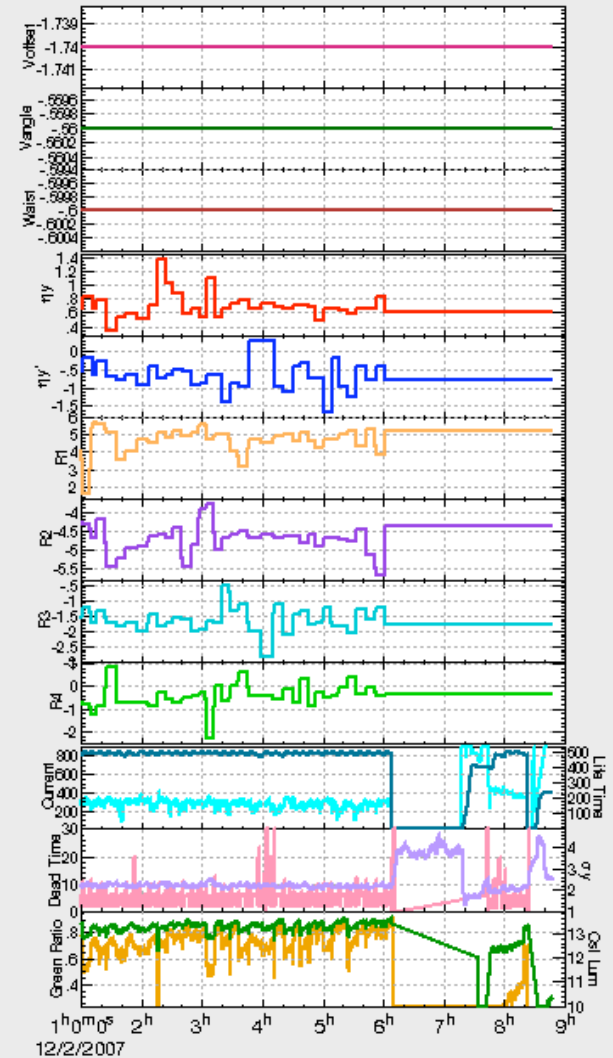
η_y'
-.53 -> -.77

R1
4.17 -> 5.17

R2
-4.27 -> -4.36

R3
-1.61 -> -1.78

R4
-.68 -> -.32



12/2/2007

Lum_{Max}: 13.668
GR_{Max}: 92.37%

Knob 2

LER

LER Size@Inj

0 -> 0@0A

v_x @0A

.5091 -> .5091

v_y @0A

.5774 -> .5774

ξ_x

-.684 -> -.684

ξ_y

4.243 -> 4.243

$d_\delta \alpha_x^*$

15.76 -> 15.76

$d_\delta \alpha_y^*$

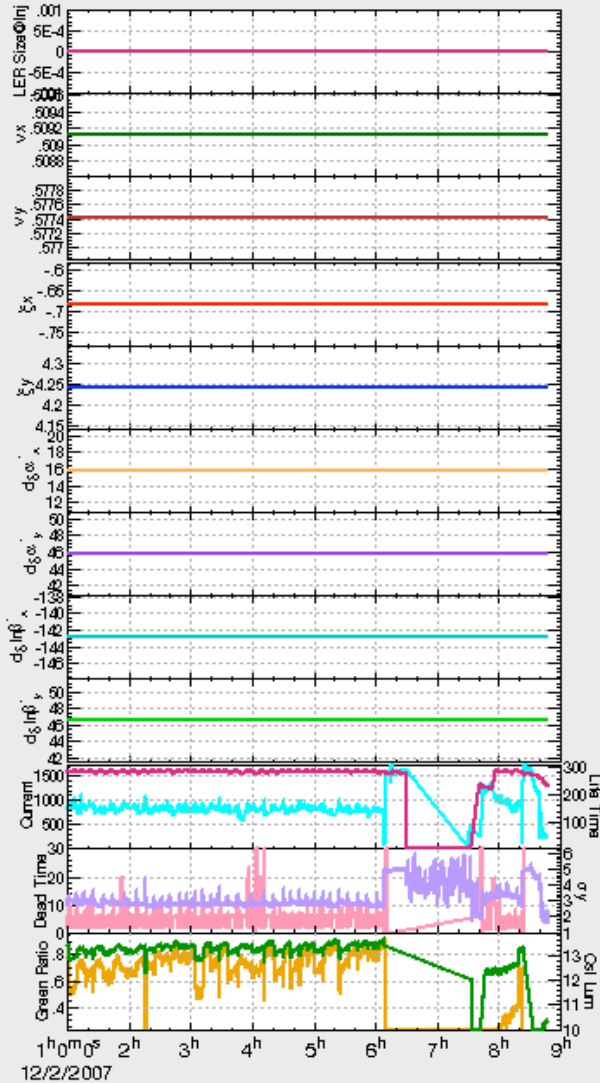
45.75 -> 45.75

$d_\delta \ln \beta_x^*$

-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

$d_\delta \ln \beta_x^*$

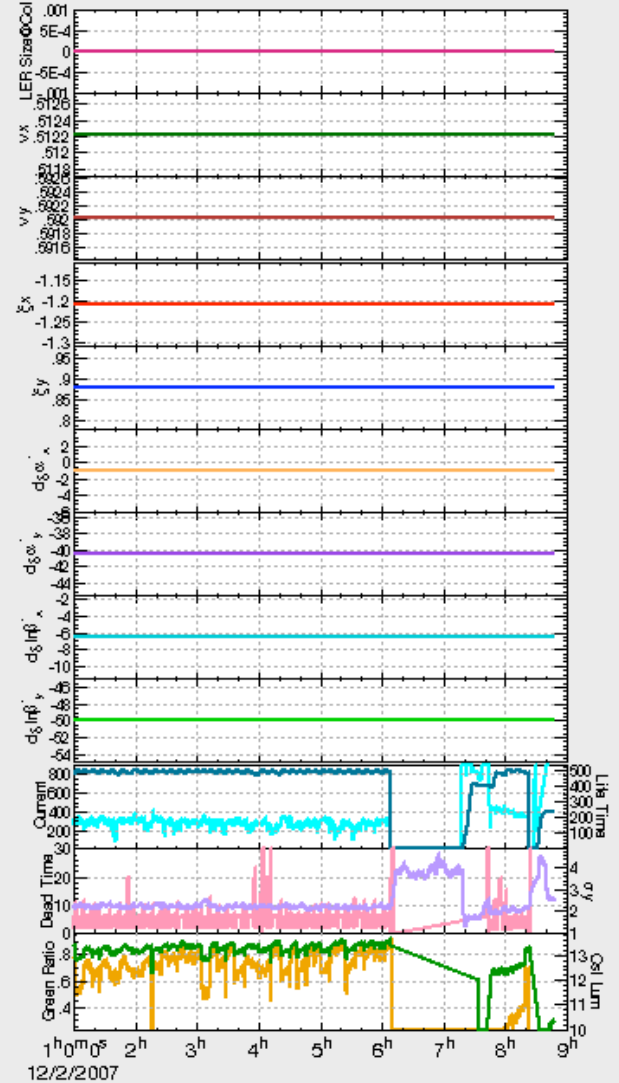
-6.55 -> -6.55

$d_\delta \ln \beta_y^*$

-49.97 -> -49.97

Lum_{Max}: 13.668

GR_{Max}: 92.37%



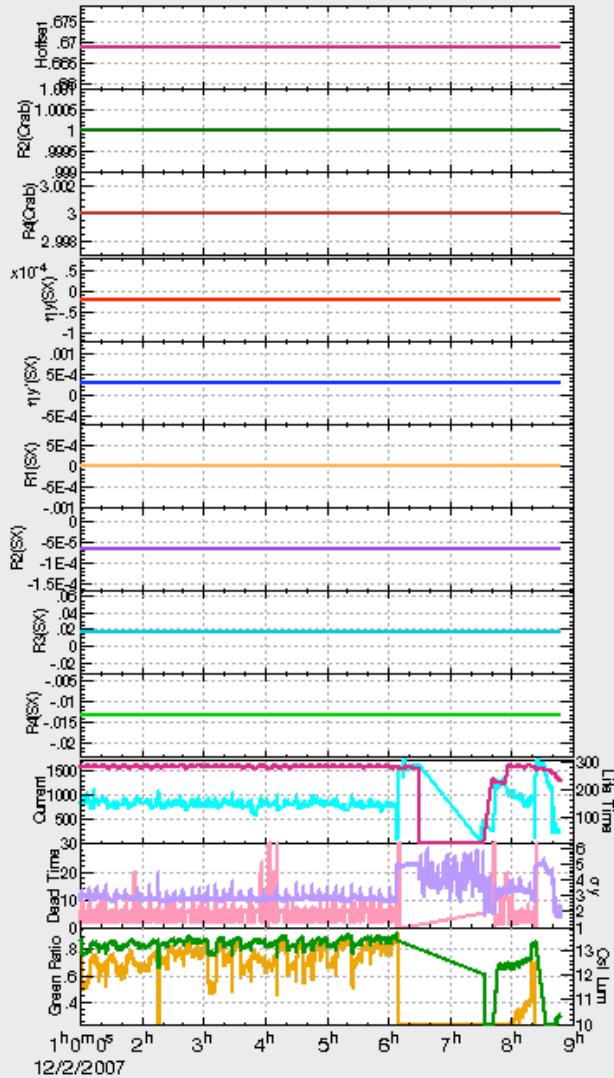
Knob 3

LER

Offset
 .669 -> .669
R2(Crab)
 1 -> 1
R4(Crab)
 3 -> 3

 η (SX)
 $-2.2E-5 \rightarrow -2.2E-5$
 η' (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)
 $-.013 \rightarrow -.013$

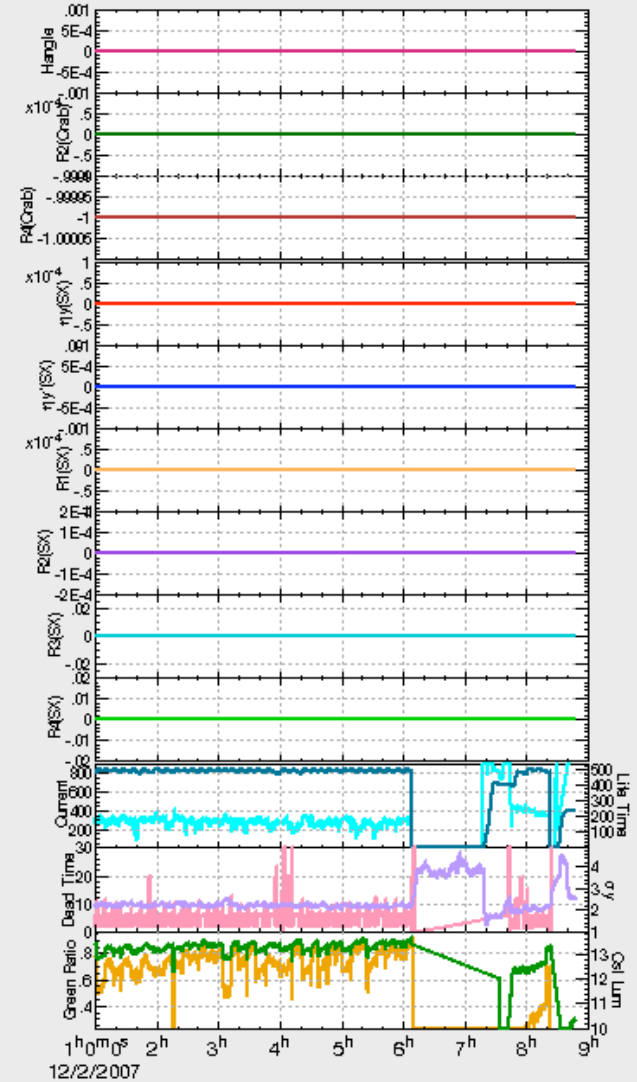


HER

Hangle
 0 -> 0
R2(Crab)
 0 -> 0
R4(Crab)
 $-1 \rightarrow -1$

 η (SX)
 0 -> 0
 η' (SX)
 0 -> 0

R1(SX)
 0 -> 0
R2(SX)
 0 -> 0
R3(SX)
 0 -> 0
R4(SX)
 0 -> 0



Lum_{Max}: 13.668
GR_{Max}: 92.37%

12/2/2007

12/2/2007

Comments

Troubles

1. 6:08 HER Crab D11F Cavity CCG Abort
2. HER Abort Kicker Thermometer Trouble
 - After HER Crab Abort "Ceramic Temp Alarm AKH1_2_3" was given.
 - Thermometer of AKH1_2_3 said the temperature was 9.9×10^{37} Degree.
 - The beam abort signal could not be reset, so we could not restart physics run.
 - We contacted with Kikuchi_san and Mimashi_san, and asked how to handle it.
 - According to their instruction, we entered KEKB tunnel and checked the control panel of the abort kicker cooling water system, but we could not solve this problem.
 - Since the flow rate of the cooling water was

Troubles

1. 8:31 HER Abort
 - unknown reason
2. ZHQF4E_14 Set Failed (TimeOut)
3. ZHQC5LP_1 Rejected (RangeOut)
4. BPM D01-D12, LC1-8 Delayed

Operationに関する感想、提案など

終わり