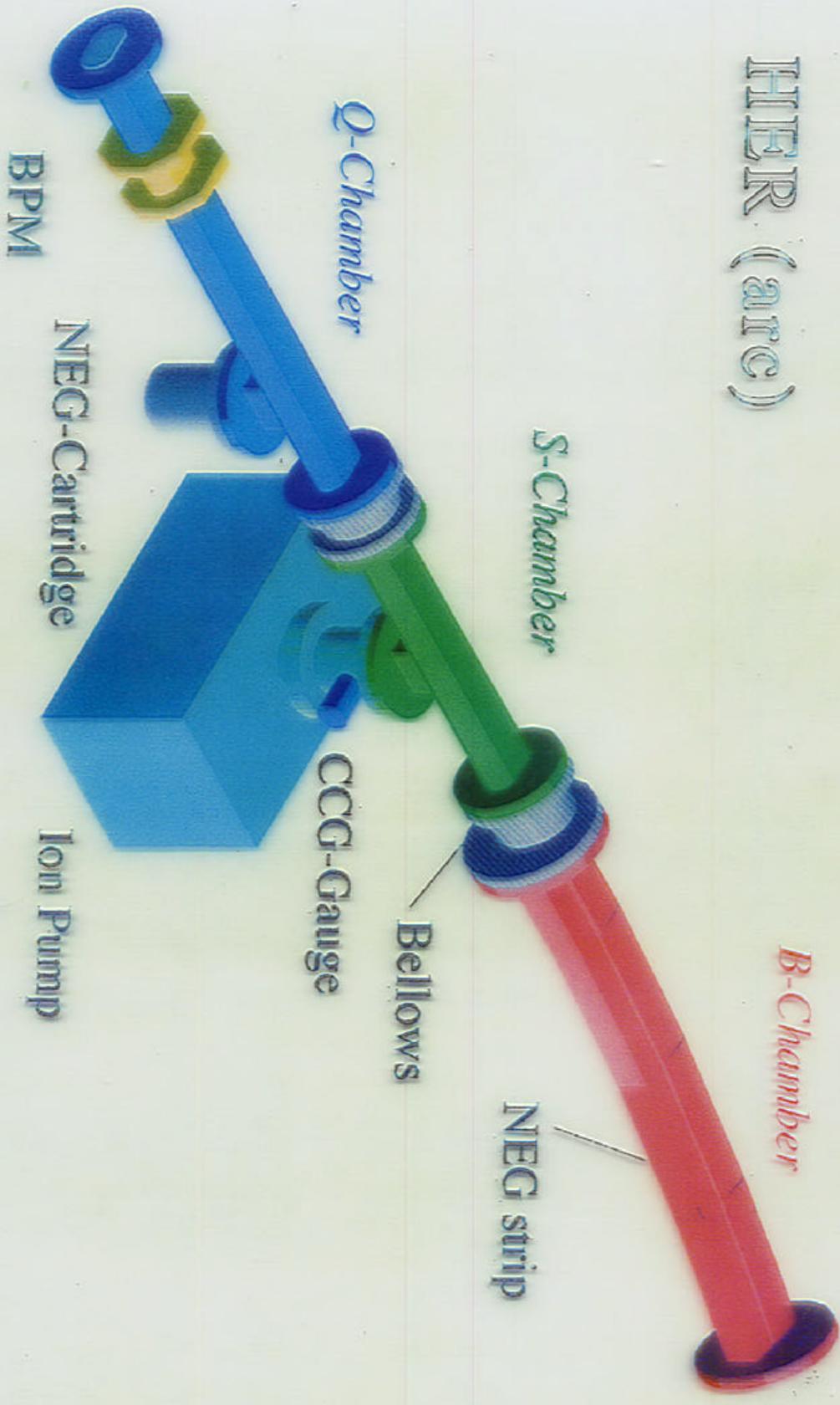
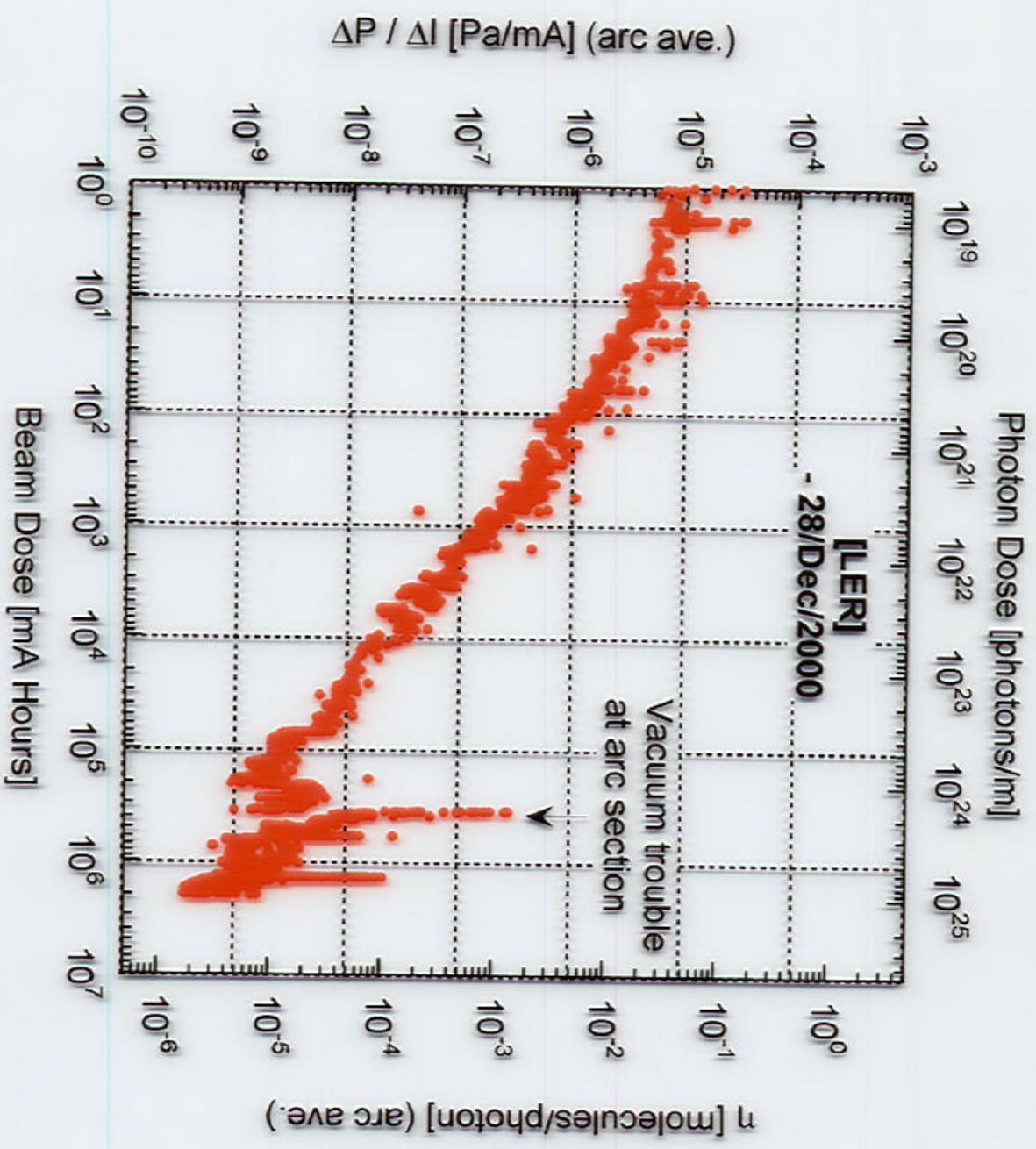
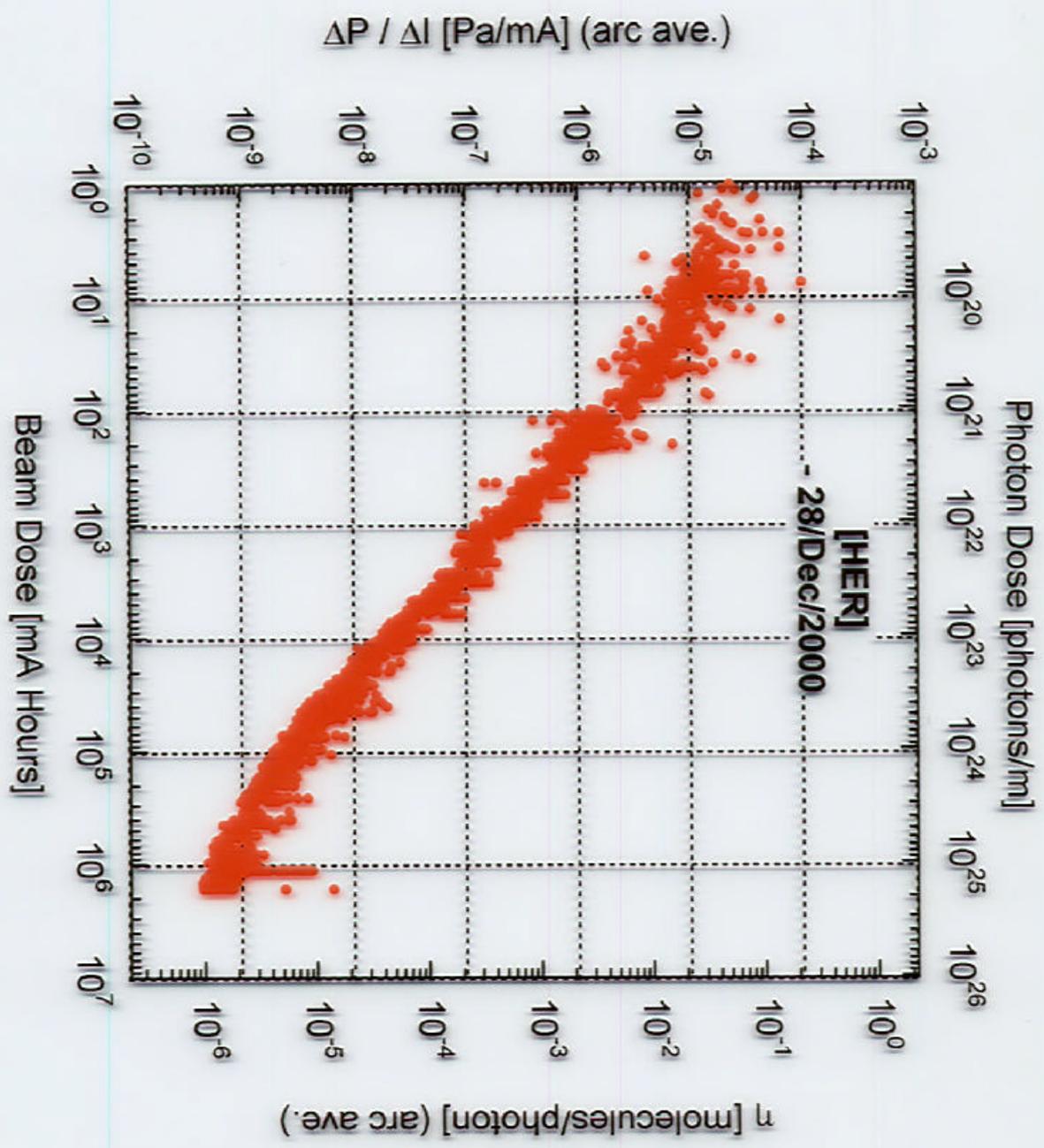


HER (arc)





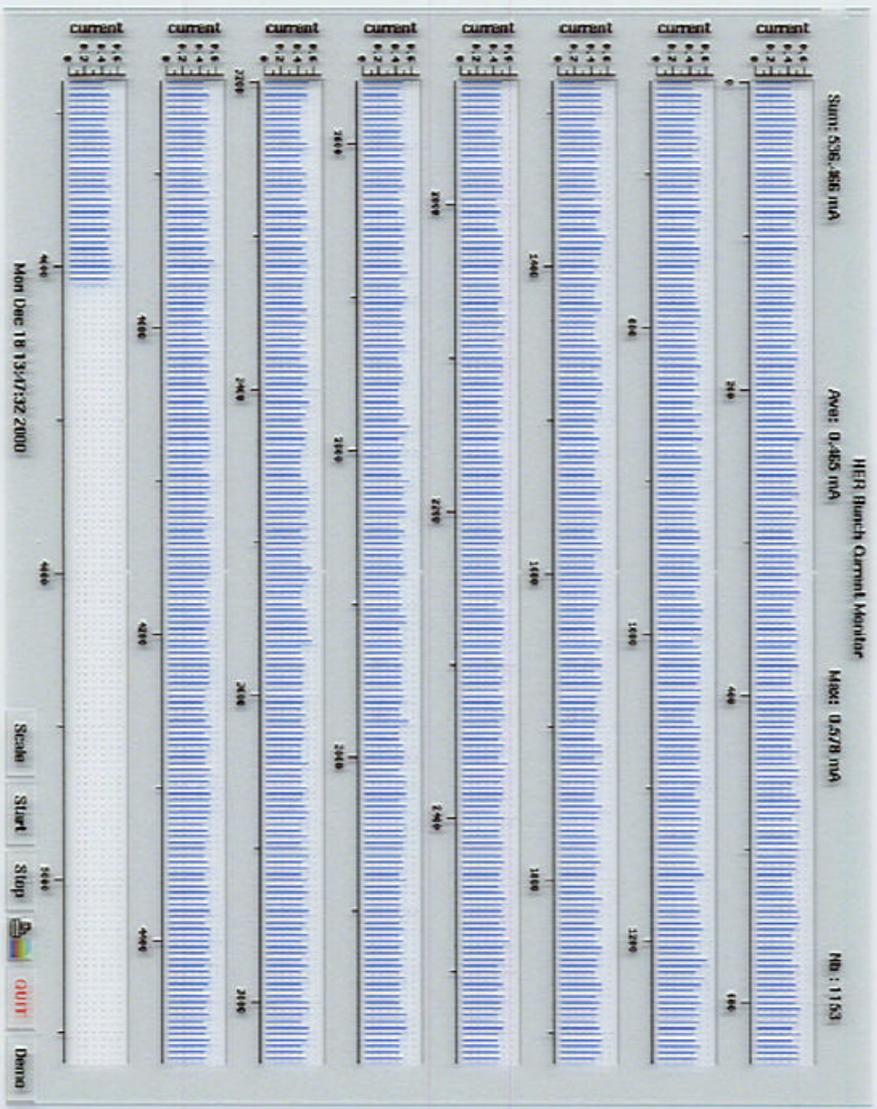


94/4 -98/11	Construction
98/12/1	Commissioning of HER started
99/1/10	Commissioning of LER started
99/4/19	End of 1st stage commissioning
99/5/1	BELLE roll-in
99/5/25	Start of operation with BELLE
99/6/1	Observation of 1st hadronic event

99/6/9	First physics run Average $L=1.05 \times 10^{31}$ Integrated $L=505/\text{nb}$ Observed 1269 hadronic events
99/6/27 -8/5	Physics run Peak $L=2.9 \times 10^{32}$ Integrated $L=26/\text{pb}$
99/8/5 -10/12	Summer shutdown 4 ARES in LER and 4 ARES in HER were added
99/10/12	Operation resumed
99/10/24 -12/16	Physics run Peak $L=6.9 \times 10^{32}$ Integrated $L=300/\text{pb}$

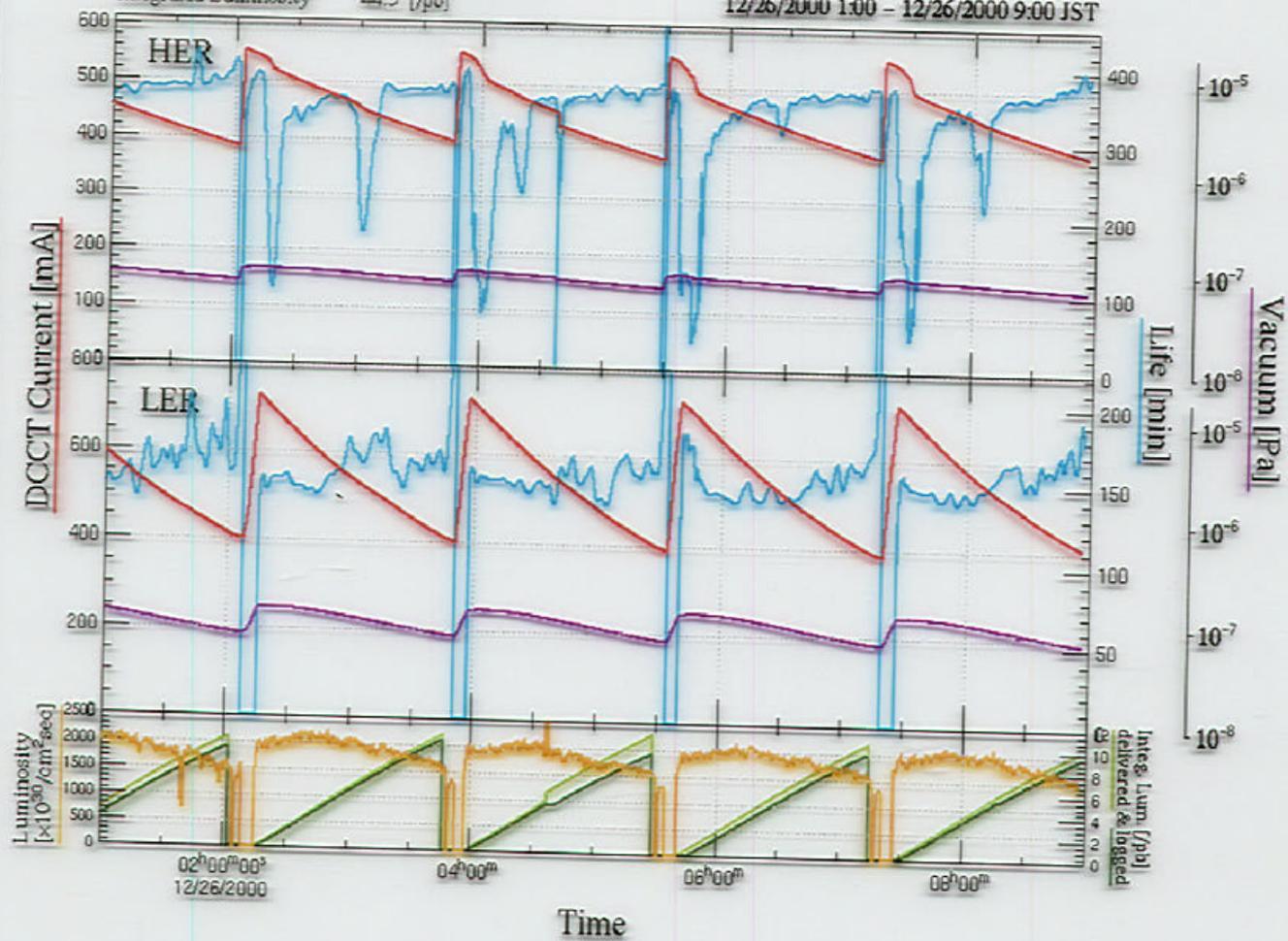
99/12/27 -00/1/11	New-year shutdown
00/2/18	Peak $L=1.03 \times 10^{33}$
00/5/8	Int $L/day=90.7/pb$
00/7/23	Peak $L=2.04 \times 10^{33}$
00/7/23	Logged L by BELLE 6.83/fb
00/7/25	Start of summer shutdown 1) 4 SCC added 2) Movable masks and bellows replaced 3) Solenoid winding over LER chambers

00/10/10	Operation resumed
00/12/25	Peak $L=2.37 \times 10^{33}$
	Int $L/day=135.3/pb$
12/20-26	Int $L/week=880/pb$
00/12/28	Logged L by BELLE
	11.09/fb
00/12/28	New-Year shutdown
-01/01/16	Solenoid winding
01/01/16	Operation resumed
01/02/07	Peak $L=2.39 \times 10^{33}$
01/02/16	Logged L by BELLE
	13.00/fb
01/07/15	Start of summer shutdown

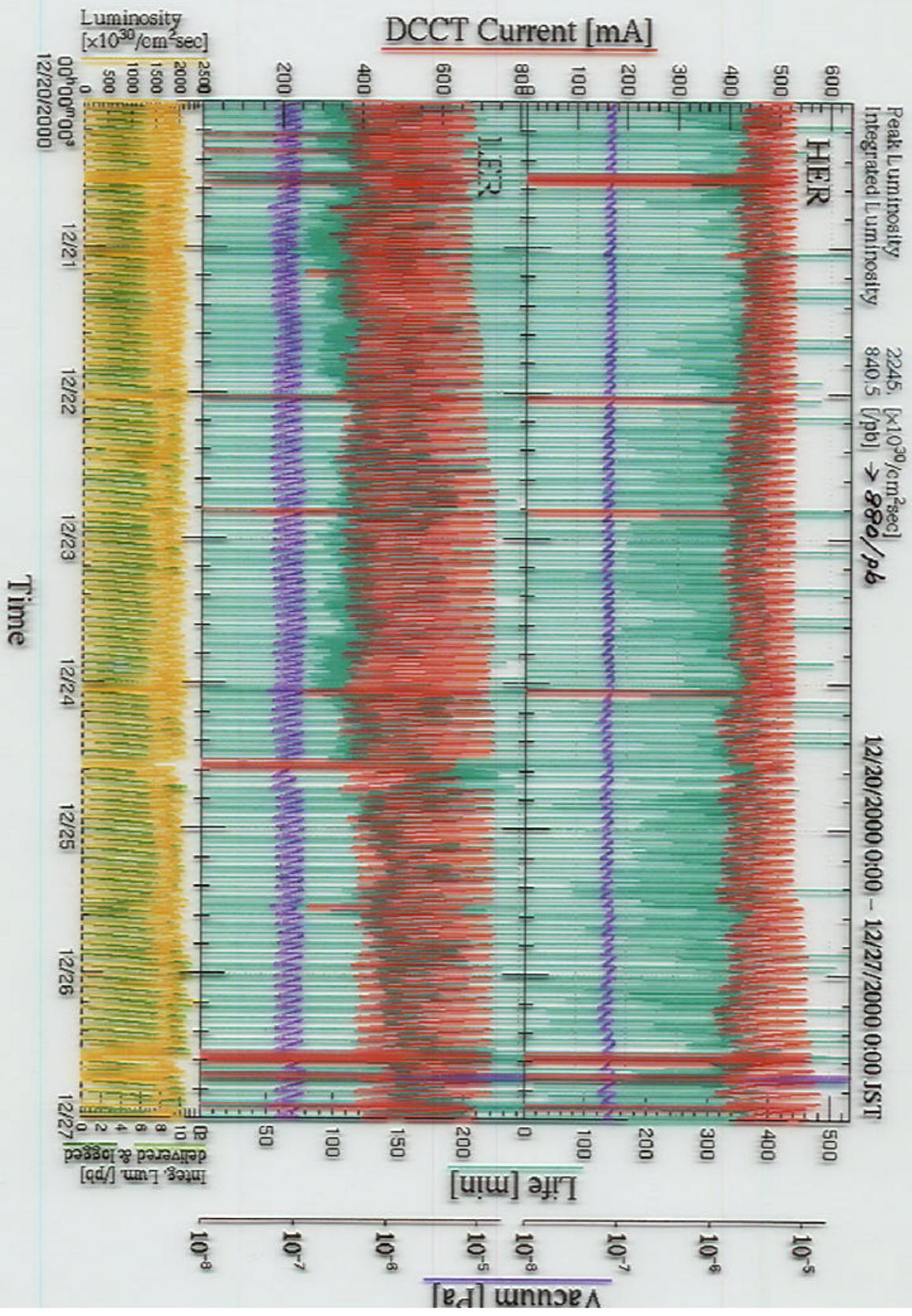


Peak Luminosity 2218. [$\times 10^{30}/\text{cm}^2\text{sec}$]
Integrated Luminosity 44.5 [pb]

12/26/2000 1:00 - 12/26/2000 9:00 JST



From Year: 2000 Month: 12 Day: 26 Hour: 1 For 1/3 Days Replot Print transparency



From Year: 2000 Month: 12 Day: 20 Hour: 0 For 7 Days

Replot Print

transparency

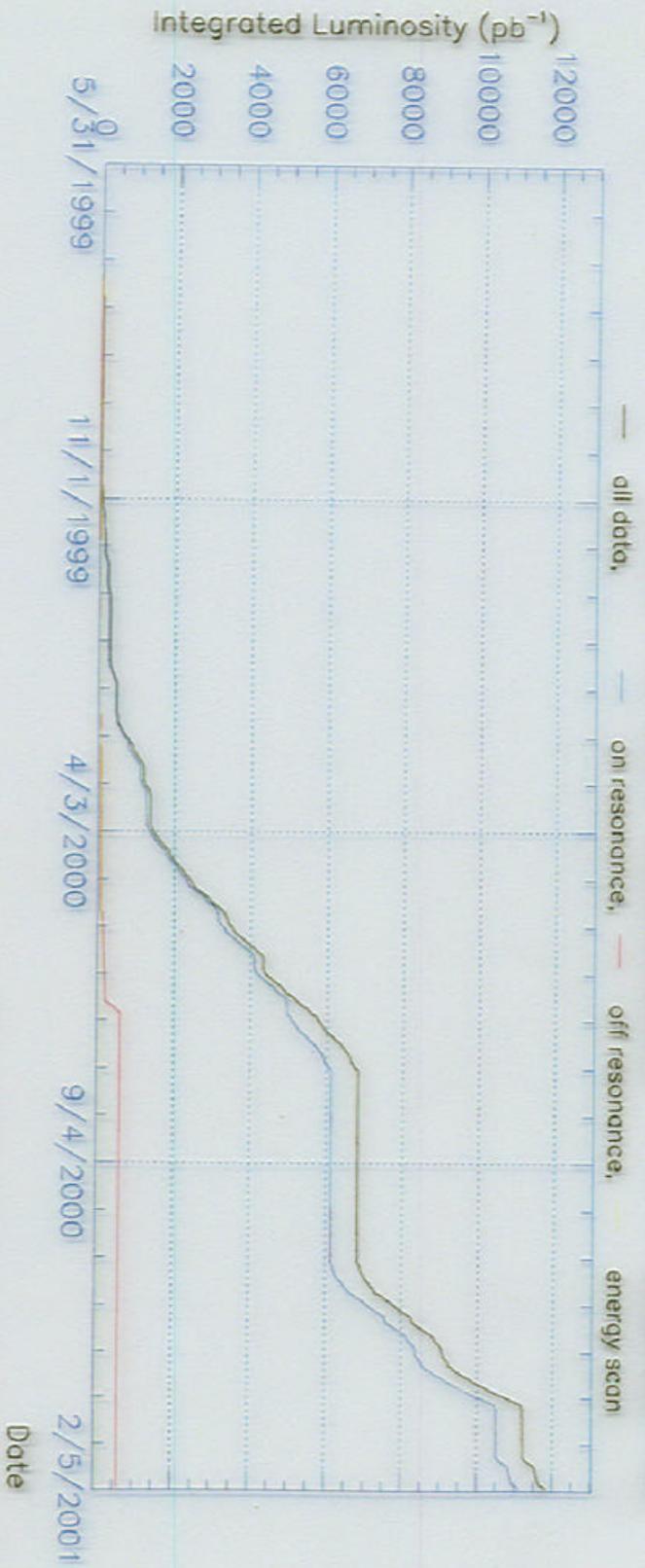
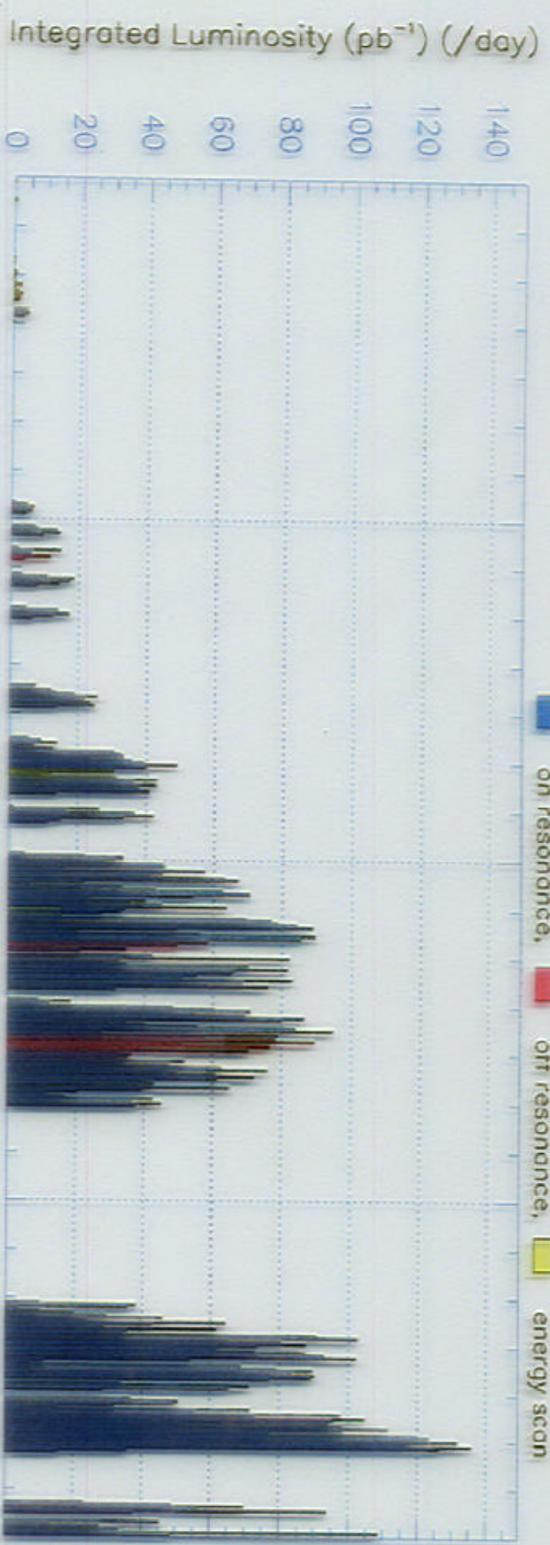
Hard Copy

↑
tune
cha



Integrated Luminosity (pb⁻¹) (/day)

21/02/07 07.48

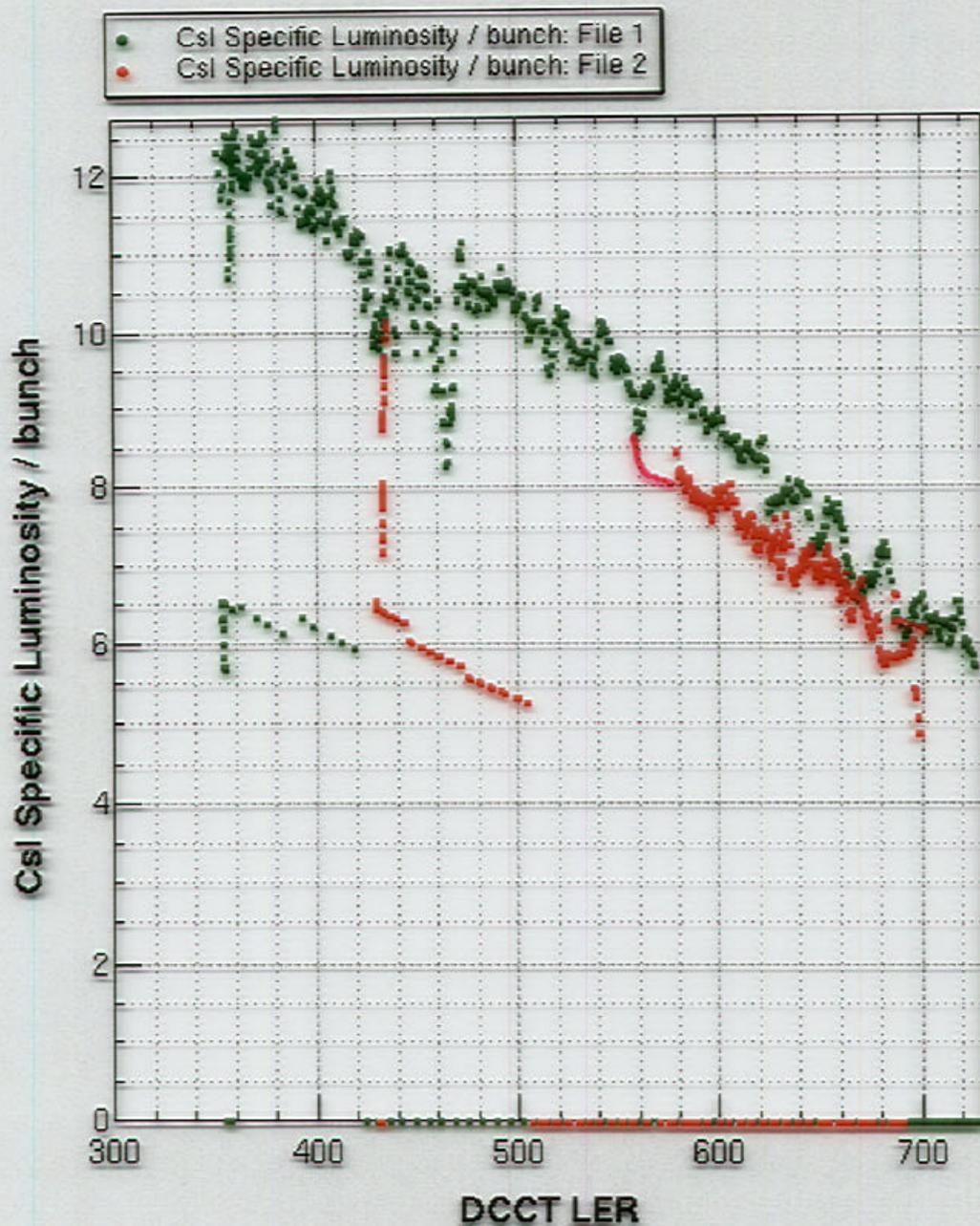


File 1 Fill#: 3391

Lum2000_12_24_4_24_47.dat

File 2 Fill#: 3813

Lum2001_2_17_8_1_26.dat



Tune_{old} α γ
 .52 .10
Tune .52 .63

Performances of KEKB

	As of 00/07/25	As of 00/12/28
Energy e^+/e^- (GeV)	3.5/8.0	3.5/8.0
Peak luminosity ($10^{33} \text{ cm}^{-2} \text{ s}^{-1}$)	2.04	2.37
Current e^+/e^- (A) at peak L	0.47/0.42	0.60/0.49
Maximum current e^+/e^- (A)	0.75/0.50	0.86/0.65
Number of bunches	1146	1153
Bunch spacing(ns)	8	8
Beta function at IP β_y^* (cm)	0.7	0.7
Beam sizes at IP σ_x^* / σ_y^* (μm)	112(e^+)/145 (e^-)/1.7	
Beam-beam tuneshift $e^+ \xi_x/\xi_y$ $e^- \xi_x'/\xi_y'$	0.036/0.037 0.029/0.023	0.045/0.038 0.042/0.020
Max int. luminosity/day (1/pb)	90.6	135.3
Max int. luminosity/week (1/pb)	505	880
Logged luminosity by BELLE (1/fb)	6.83	11.09

Summary and Future Prospects

1. Luminosity

- **Present performance of KEKB corresponds to 3/fb/month and 25/fb/year.**
- **In order to improve the performance, beam-beam tuneshift and stored currents should be made larger.**

2. Beam-beam limit

- **Even with crossing at an angle, reasonable tuneshift of 0.02-0.04 have been achieved.**

$$\mathcal{L} \propto \frac{I \cdot \xi_y}{\beta_y^*}$$

I : stored current

ξ_y : beam-beam tunes shift

β_y^* : β -value at IP

$$I = n_b \cdot I_b$$

n_b : number of bunches

I_b : bunch current