? 06.02.2011 15:17 oracle **Shift summary**

06.02.2011 15:07 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 997.31 MeV / 6.3 nm
Charge:              0.00 nC
Main solenoid:       -299.5 A
Bucking coil:        +20.7 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

	GUN	ACC1	ACC39	ACC2/3	ACC4/5	ACC6/7
Power/Gradient	+3.640	+164.00	+19.00	+297.50	+250.00	+276.50
Readback	3.87	164.0	19.0	297.8	250.3	276.9
Phase	-10.80	+2.70	-4.20	-1.00	-8.90	-8.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	5.4	2.7	-4.2	-1.0	-8.9	-8.2

Undulator steerers and aircoils

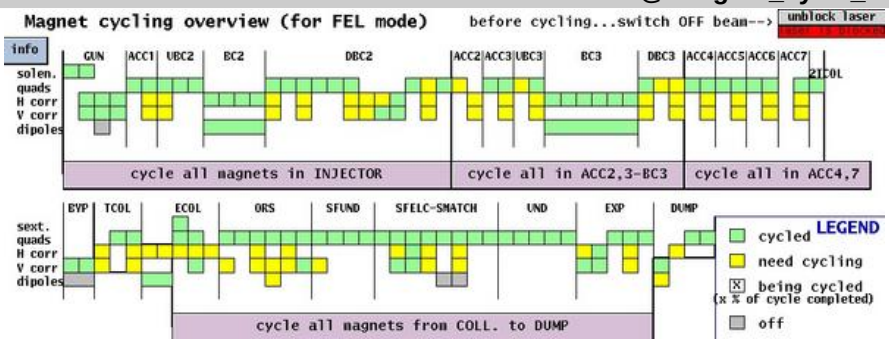
H7SMATCH	H12SMATCH
+0.254	**-1.928**

V7SMATCH	V12SMATCH
-0.233	**-1.928**

Intra-undulator steerers

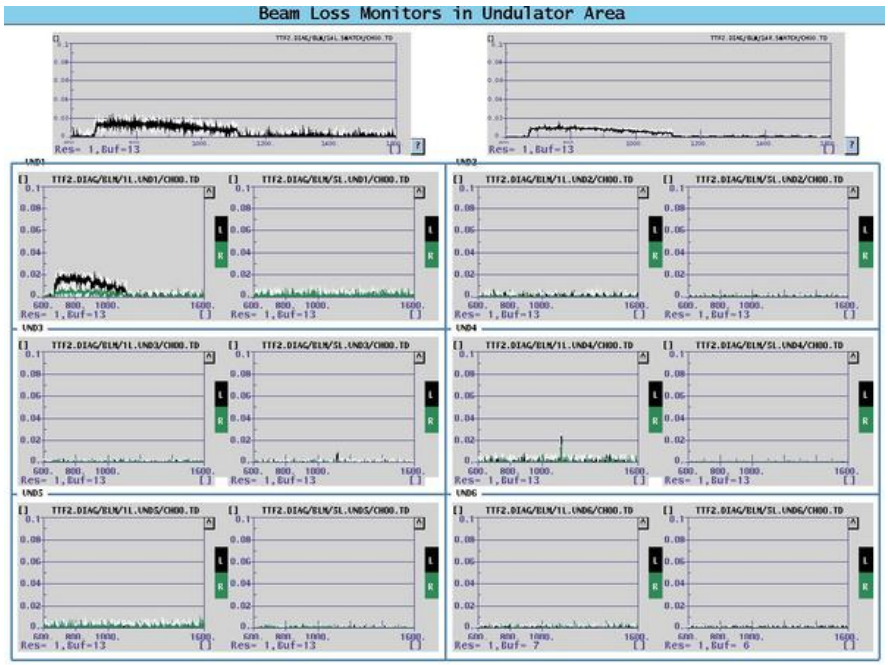
H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.40	**-4.80**	**-4.80**	**-4.70**	**-4.80**	**-5.00**

06.02.2011 15:07 ttflinac **ttflinac@:magnet_cycle_overview_fel**



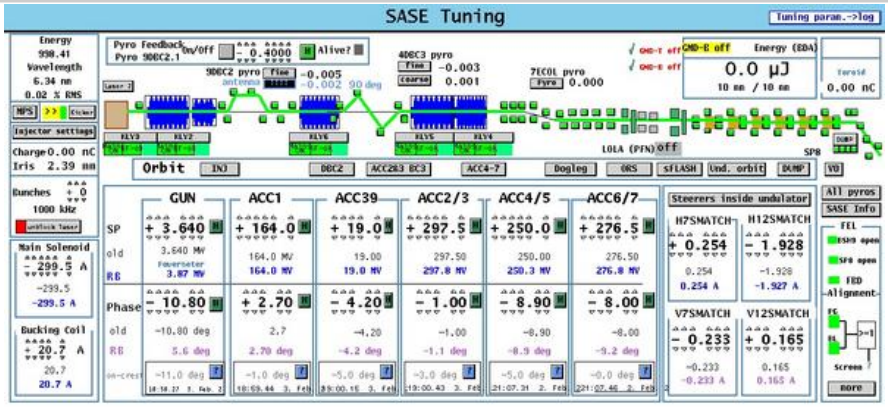
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:07:33-00.JPG

06.02.2011 15:07 ttflinac **ttflinac@:BLM_UNDULATORS**



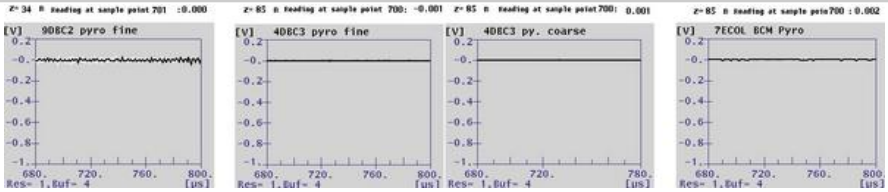
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:07:56-00.JPG

06.02.2011 15:08 ttflinac **ttflinac@:SASE_tuning**



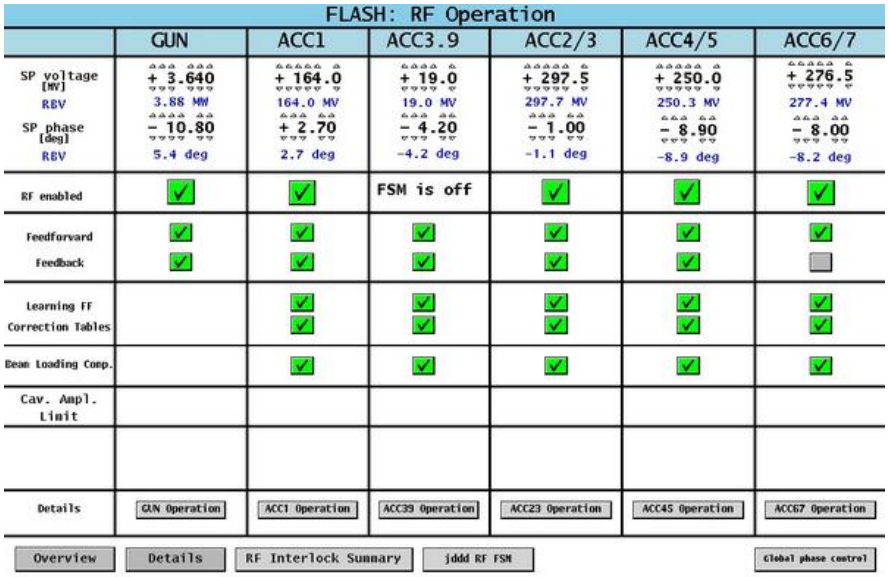
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:08:42-00.JPG

06.02.2011 15:08 ttflinac **ttflinac@:All_BCM**



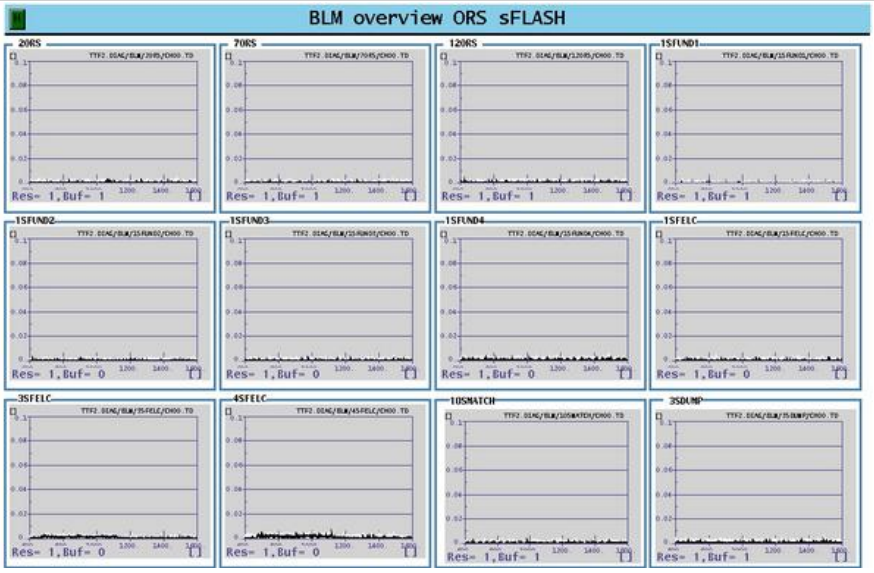
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:08:57-00.JPG

06.02.2011 15:09 ttflinac **ttflinac@:RF_OPERATION**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:09:20-00.JPG

06.02.2011 15:09 ttflinac **ttflinac@:blm_overview_ORS**

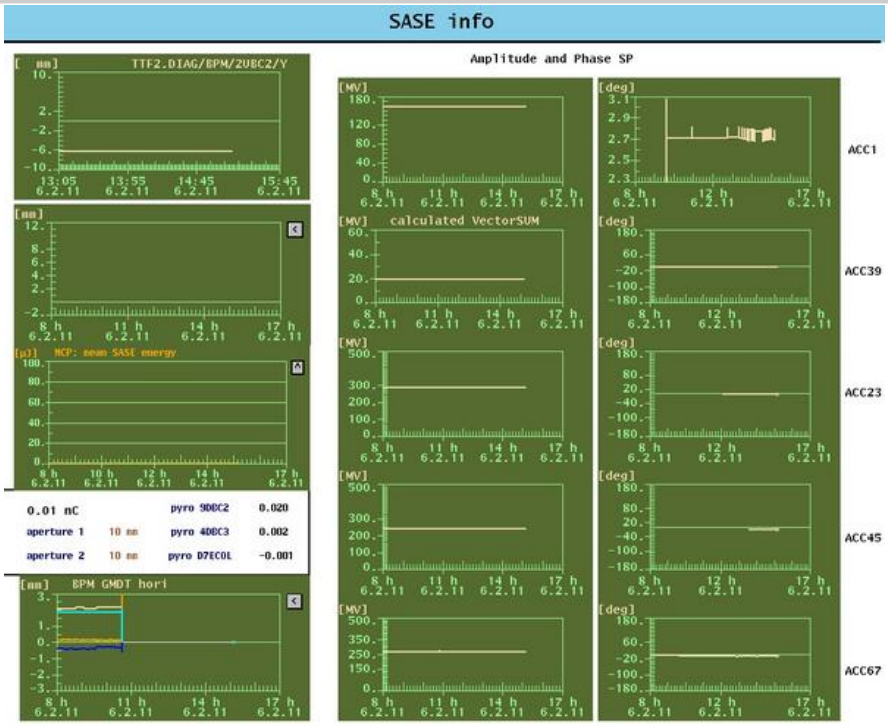


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:09:47-00.JPG

06.02.2011 15:10 ttflinac **ttflinac@:dose_und**

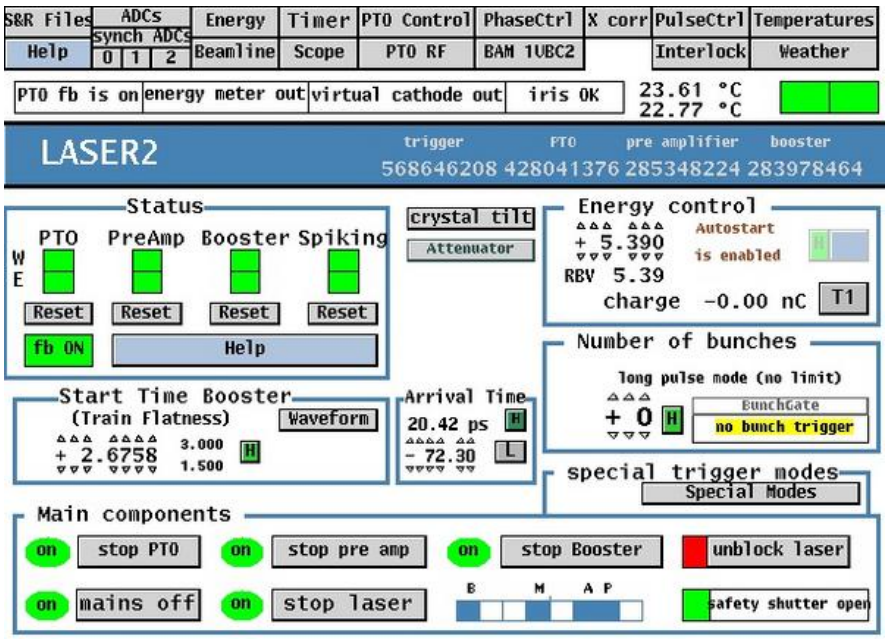
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:10:04-00.JPG

06.02.2011 15:11 ttflinac **ttflinac@:SASE_info**



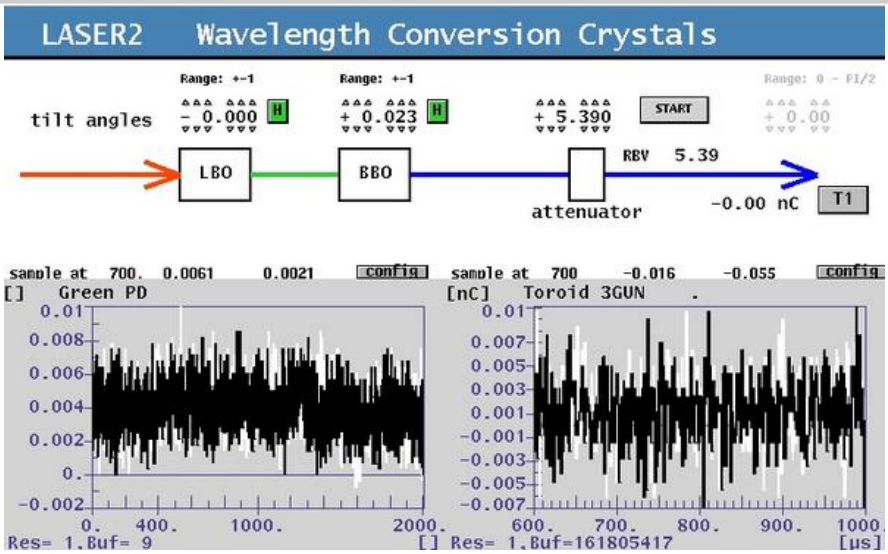
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:11:12-00.JPG

06.02.2011 15:11 ttflinac **ttflinac@:laser2_control**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:11:30-00.JPG

06.02.2011 15:11 ttflinac **ttflinac@:laser_crystal_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:11:41-00.JPG

06.02.2011 15:24 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 997.31 MeV / 6.3 nm
Charge:              0.00 nC
Main solenoid:       -299.5 A
Bucking coil:        +20.7 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

	GUN	ACC1	ACC39	ACC2/3	ACC4/5	ACC6/7
Power/Gradient	+3.640	+164.00	+19.00	+297.50	+250.00	+276.50
Readback	3.87	164.0	19.0	297.8	250.3	276.5
Phase	-10.80	+2.70	-4.20	-1.00	-8.90	-8.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	5.7	2.7	-4.2	-1.0	-8.9	-9.3

Undulator steerers and aircoils

H7SMATCH | H12SMATCH

```
   +0.254   |  -1.928
-----------+-----------
  V7SMATCH  |  V12SMATCH
   -0.233   |  -1.928
```

Intra-undulator steerers

H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.40	**-4.80**	**-4.80**	**-4.70**	**-4.80**	**-5.00**

06.02.2011 15:25 ttflinac **Main linac parameters**

shift documentation

Laser

```
Number of bunches ...... 0
Bunch frequency ........ 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ........... 0.0030 ms
Pump current_3 ......... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.68 ms
Attenuator SP .......... 5.39
Iris diameter .......... 17072 steps
Iris diameter .......... 2.39 mm
```

Gun

```
Feedforward/Feedback ... on/on
FSM .................... on
Pfwd SP ................ 3.64
VS ampl. ............... 18.33
Phase SP ............... -10.80 deg
VS phase ............... 5.57 deg
Pfwd (peak) ............ 3.871 MW
Prefl (peak) ........... 2.920 MW
Pfwd sample point ...... 700
Pfwd (at sample point) . 18.324 MW
Prefl sample point ..... 720
Prefl (at sample point)  5.590 MW
Flat top ............... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -299.53 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ....... 0.000 A
Charge 3GUN(T1) ........ 0.00 nC
DC kicker delay ........ 6.80 ms
DC kicker HV ........... not local
DC kicker HV ........... disabled
DC kicker HV ........... off
DC kicker SP ........... 60.00 V
DC kicker start ........ 124.00 ns
```

ACC1

```
Feedforward/Feedback ... on/on
Feedback gain .......... 2.0
Pfwd SP ................ 164.00
Pfwd RBV ............... 164.00
Phase SP ............... 2.70 deg
Phase RBV .............. 2.72 deg
Pfwd C1.ACC1 ........... 187.5 kW
Pfwd C5.ACC1 ........... 178.6 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0125 V
Radiator 9DBC2 ......... out
Slow phase feedback .... off
Slow ph. FB target/gain  -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)
```

ACC39

```
Feedforward/Feedback ... on/on
Feedback gain .......... 10.0
Pfwd SP ................ 19.00
Phase SP ............... -4.20 deg
Pfwd C1.ACC39 .......... <error>
Flat top ............... 800 us
```

ACC2/3

```
Feedforward/Feedback ... on/on
Feedback gain .......... 2.0
Pfwd SP ................ 297.50
Pfwd RBV ............... 297.86
Phase SP ............... -1.00 deg
Phase RBV .............. -1.08 deg
Pfwd C5.ACC2 ........... 126.44 kW
Pfwd C1.ACC3 ........... 219.00 kW
Flat top ............... 450 us
Dipole BC3 (RBV) ....... 56.00 A
Pyro 4DBC3.1 ........... -0.0011 V
Pyro 4DBC3.3 ........... 0.0018 V
Radiator 4DBC3 ......... out
```

ACC4/5

```
Feedforward/Feedback ... on/on
Feedback gain .......... 40.0
Pfwd SP ................ 250.00
Pfwd RBV ............... 250.21
Phase SP ............... -8.90 deg
Phase RBV .............. -8.94 deg
Pfwd C1.ACC4 ........... 116.14 kW
Pfwd C2.ACC5 ........... 91.56 kW
Pfwd C1.ACC6 ........... 0.61 kW
Flat top ............... 800 us
```

ACC6/7

```
Feedforward/Feedback ... on/off
Feedback gain .......... 50.0
Pfwd SP ................ 276.50
Pfwd RBV ............... 276.57
Phase SP ............... -8.00 deg
Phase RBV .............. -9.30 deg
Pfwd C1.ACC6 ........... 134.65 kW
Pfwd C1.ACC7 ........... 150.40 kW
Flat top ............... 800 us
```

Bypass

```
Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass .......... 1211.4 MeV
RF vector sum ALL ...... 686.6 MeV
Charge 16BYP ........... 0.00 nC
```

Collimator

```
Dipole D1ECOL (RBV) .... 176.89 A
Energy dogleg .......... 997.3 MeV
Charge 7ORS ............ 0.00 nC
```

Undulator

```
1SFUND1 gap RBV ........ 220.0 mm
1SFUND2 gap RBV ........ 220.0 mm
1SFUND3 gap RBV ........ 220.0 mm
1SFUND4 gap RBV ........ 180.0 mm
```

Dump

```
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
```

Feedbacks

```
Charge feedback gain ... <error>
Charge feedback SP ..... <error>
```

Dipole D6DUMP (RBV) .... 209.59 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ..... -0.00 nC
Photon beamline
Aperture 1 ..... 10 mm
Offset h/v ..... 0/-1 mm
Aperture 2 ..... 10 mm
Offset h/v ..... 1/0 mm

PTO feedback ..... on

Status saved in machine file 2011-02-06T15_24_54+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-06T152454

also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110206T152454.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110206T152454.sr
from computer: flashbkr2.desy.de

06.02.2011 15:28 ttflinac — Main linac parameters

shift documentation

Laser
Number of bunches 0
Bunch frequency ..... 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ..... 0.0030 ms
Pump current_3 ..... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.68 ms
Attenuator SP 5.39
Iris diameter ..... 17072 steps
Iris diameter ..... 2.39 mm

Gun
Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.64
VS ampl. 18.33
Phase SP ..... -10.80 deg
VS phase ..... 5.34 deg
Pfwd (peak) ..... 3.873 MW
Prefl (peak) ..... 2.918 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.332 MW
Prefl sample point 720
Prefl (at sample point) 5.632 MW
Flat top ..... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -299.54 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... -0.00 nC
DC kicker delay ..... 6.80 ms
DC kicker HV ..... not local
DC kicker HV ..... disabled
DC kicker HV ..... off
DC kicker SP ..... 60.00 V
DC kicker start ..... 124.00 ns

ACC1
Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 164.00
Pfwd RBV 163.96
Phase SP ..... 2.70 deg
Phase RBV ..... 2.73 deg
Pfwd C1.ACC1 ..... 187.5 kW
Pfwd C5.ACC1 ..... 178.8 kW
Flat top ..... 800 us
Dipole BC2 (RBV) ..... 73.11 A
Pyro 9DBC2.1 ..... 0.0145 V
Radiator 9DBC2 ..... out
Slow phase feedback .... off
Slow ph. FB target/gain -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)

ACC39
Feedforward/Feedback ... on/on
Feedback gain 10.0
Pfwd SP 19.00
Phase SP ..... -4.20 deg
Pfwd C1.ACC39 ..... <error>
Flat top ..... 800 us

ACC2/3
Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 297.50
Pfwd RBV 297.86
Phase SP ..... -1.00 deg
Phase RBV ..... -1.05 deg
Pfwd C5.ACC2 ..... 126.22 kW
Pfwd C1.ACC3 ..... 218.78 kW
Flat top ..... 450 us
Dipole BC3 (RBV) ..... 56.00 A
Pyro 4DBC3.1 ..... -0.0020 V
Pyro 4DBC3.3 ..... 0.0016 V
Radiator 4DBC3 ..... out

ACC4/5
Feedforward/Feedback ... on/on
Feedback gain 40.0
Pfwd SP 250.00
Pfwd RBV 250.42
Phase SP ..... -8.90 deg
Phase RBV ..... -8.91 deg
Pfwd C1.ACC4 ..... 116.14 kW
Pfwd C2.ACC5 ..... 91.12 kW
Pfwd C1.ACC6 ..... 0.00 kW
Flat top ..... 800 us

ACC6/7
Feedforward/Feedback ... on/off
Feedback gain 50.0
Pfwd SP 276.50
Pfwd RBV 277.27
Phase SP ..... -8.00 deg
Phase RBV ..... -8.23 deg
Pfwd C1.ACC6 ..... 135.09 kW
Pfwd C1.ACC7 ..... 151.05 kW
Flat top ..... 800 us

Bypass
Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass ..... 1211.4 MeV
RF vector sum ALL ..... 686.2 MeV
Charge 16BYP ..... -0.00 nC

Collimator

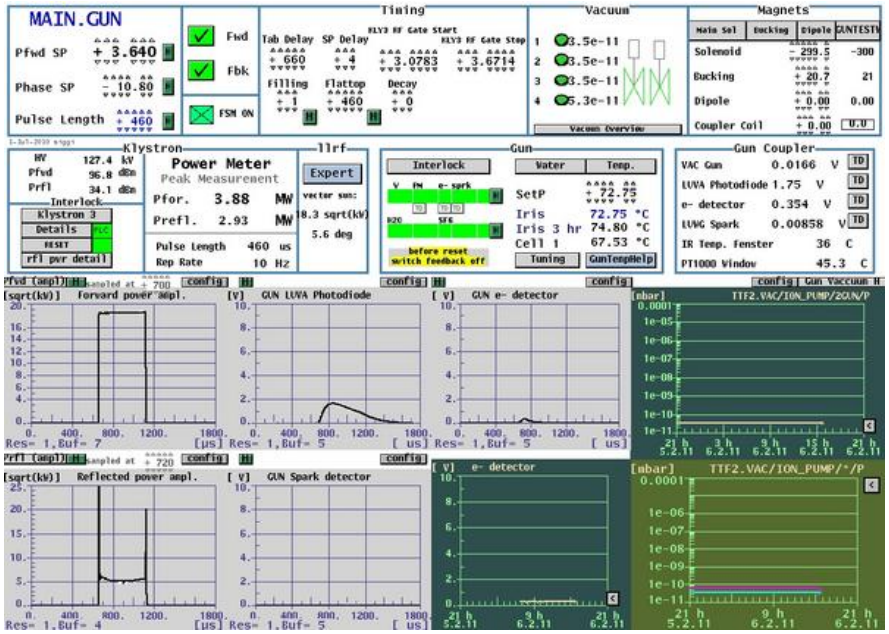
Undulator

```
Dipole D1ECOL (RBV) .... 176.89 A
Energy dogleg .......... 997.3 MeV
Charge 7ORS ............ -0.00 nC

Dump
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
Dipole D6DUMP (RBV) .... 209.59 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... -0.01 nC
Photon beamline
Aperture 1 ............. 10 mm
Offset h/v ............. 0/-1 mm
Aperture 2 ............. 10 mm
Offset h/v ............. 1/0 mm

1SFUND1 gap RBV ........ 220.0 mm
1SFUND2 gap RBV ........ 220.0 mm
1SFUND3 gap RBV ........ 220.0 mm
1SFUND4 gap RBV ........ 180.0 mm
Feedbacks
Charge feedback gain ... <error>
Charge feedback SP ..... <error>
PTO feedback ........... on
```

```
Status saved in machine file 2011-02-06T15_28_19+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-06T152819
```

```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110206T152819.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110206T152819.sr
from computer: flashbkr3.desy.de
```

06.02.2011 15:42 ttflinac **ttflinac@:gun_conditioning**



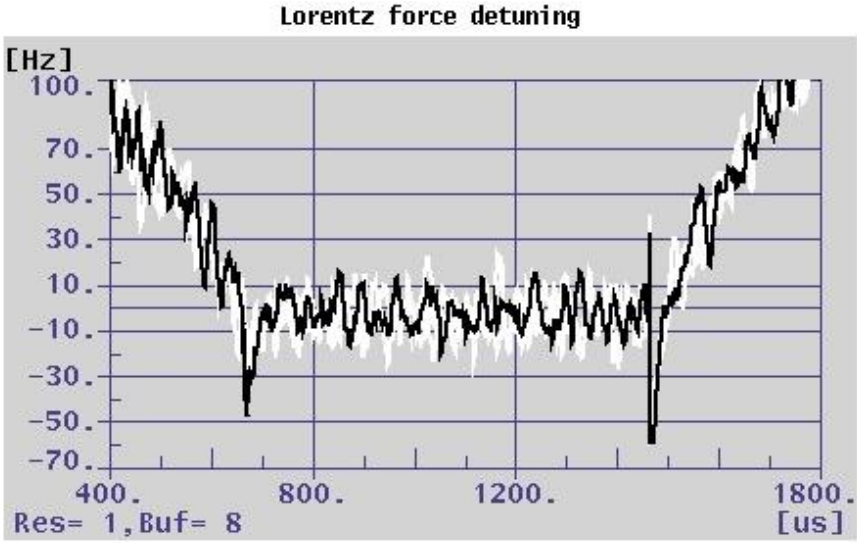
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:42:52-00.JPG

06.02.2011 15:44 vogtm **Just for the record : __all__ coupler temps in the 2K circuit of ACC39 of the last week**

```
``all'' means  (HOM2-F, HOM2-T, HOM1-F, HOM1-T ) $\bigotimes$ (cav1, cav2,cav3, cav4)
```

File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:44:55-00.JPG

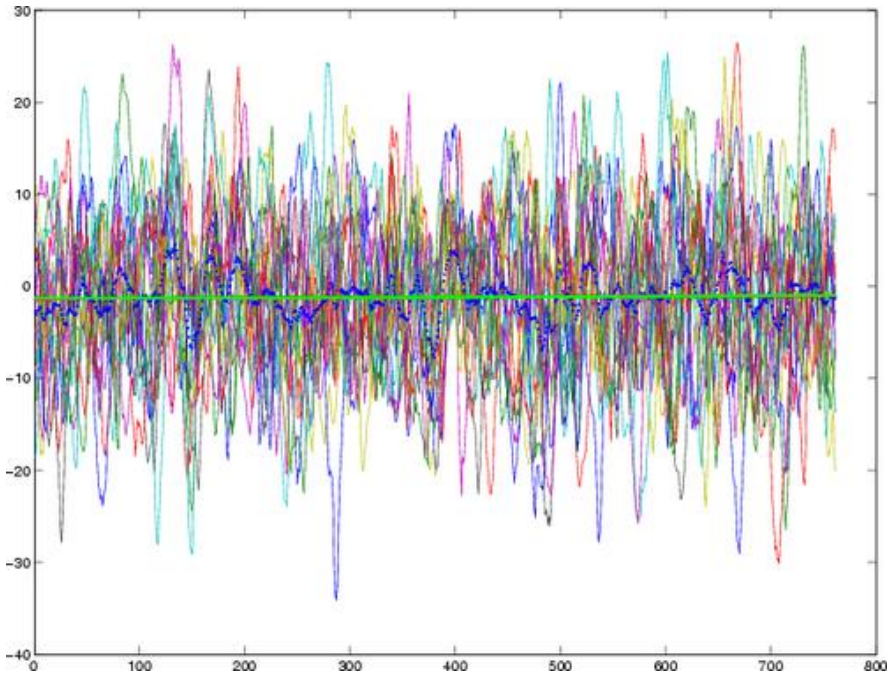
06.02.2011 15:51 M.Grecki **ACC6 Cav. 1 detuning (result obtained by optimization)**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:51:30-00.JPG

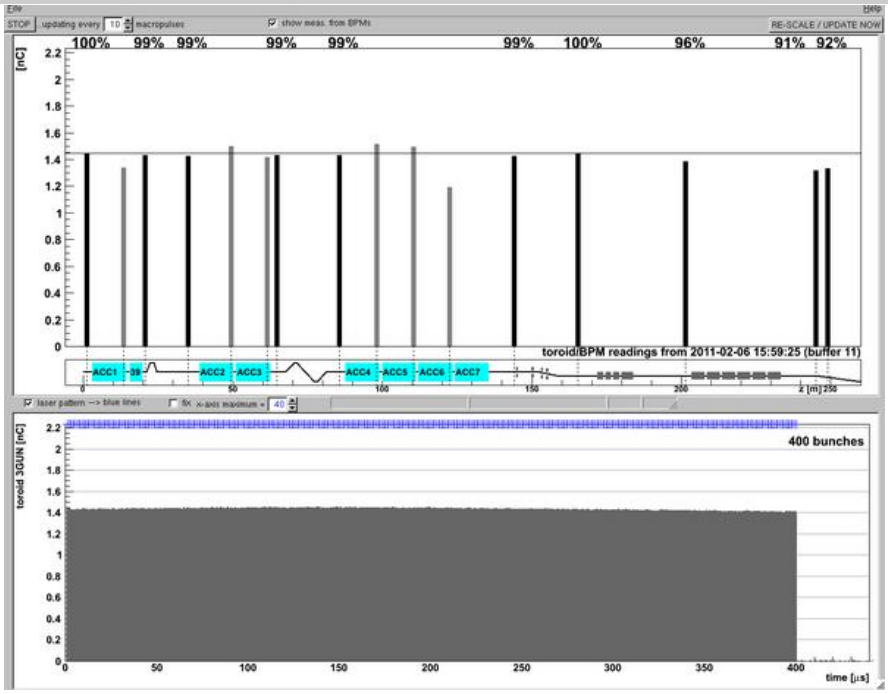
06.02.2011 15:54 M.Grecki **ACC6 Cav. 1 detuning during flattop**

measured over 20 pulses. The achieved parameters: dynamic detuning 0.3190Hz static detuning: -1.1760Hz
curvature: 0.1774 a.u. (linear and quadratic approximation covers in the picture). Settings for the piezo: 200Hz, 1 pulse, 19.12ms after A2, amp=-23.06V, DC off=-36.62W



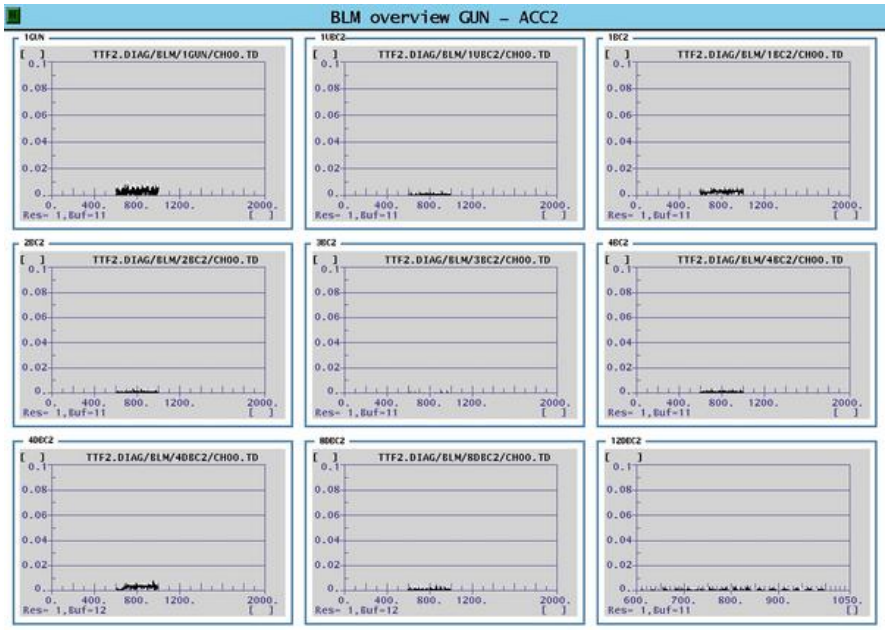
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:54:40-00.ps

06.02.2011 15:59 ttflinac **toroid charge readings**



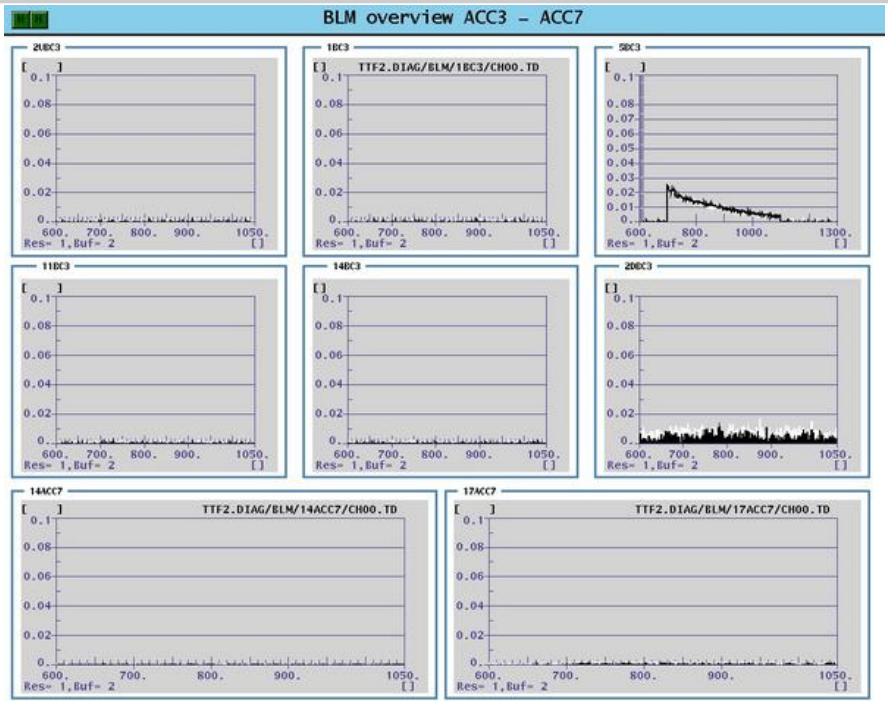
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T15:59:43-00.ps

06.02.2011 16:02 ttflinac **ttflinac@:blm_overview_from_GUN_to_ACC2**



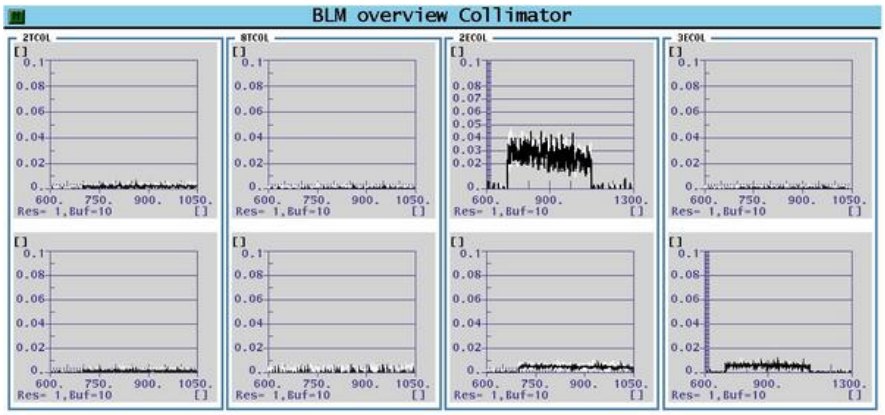
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:02:44-00.JPG

06.02.2011 16:03 ttflinac **ttflinac@:BLM_ACC3_ACC7**



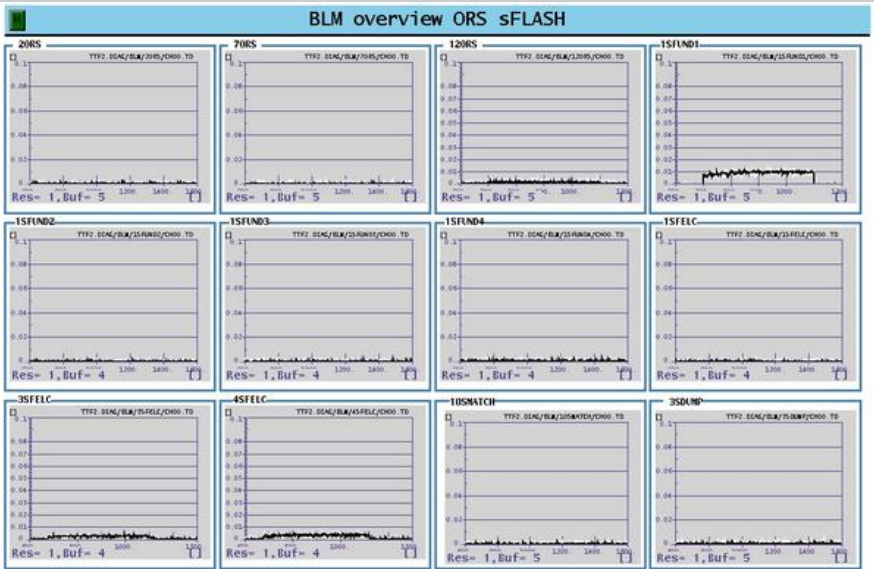
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:03:03-00.JPG

06.02.2011 16:03 ttflinac **ttflinac@:blm_overview_COL**



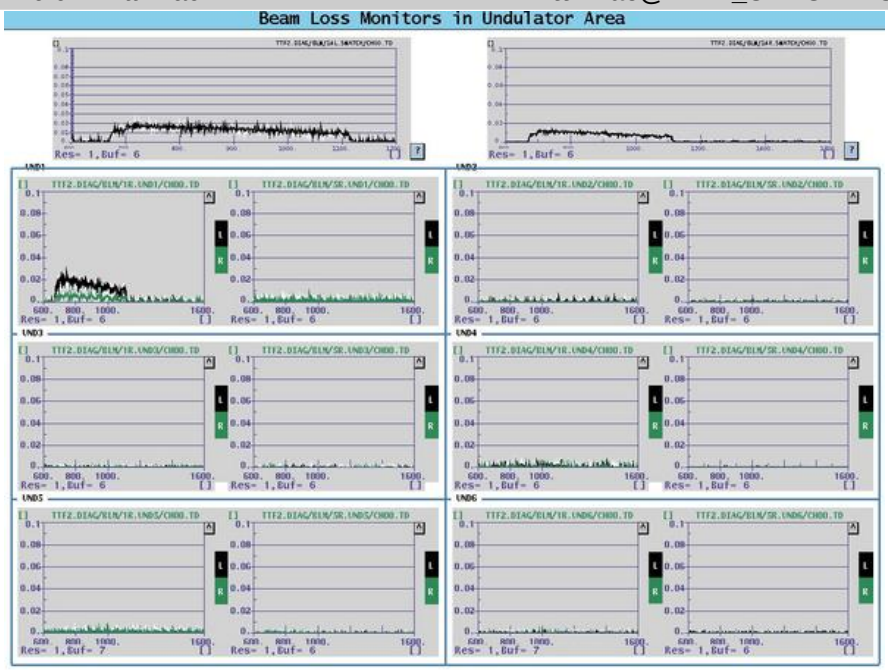
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:03:33-00.JPG

06.02.2011 16:03 ttflinac **ttflinac@:blm_overview_ORS**



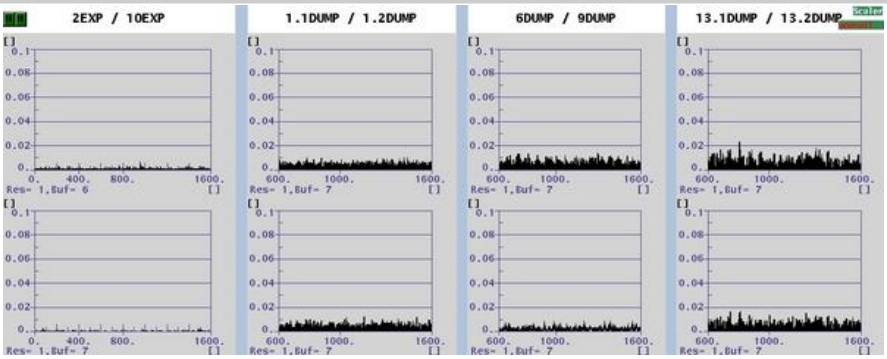
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:03:53-00.JPG

06.02.2011 16:04 ttflinac **ttflinac@:BLM_UNDULATORS**



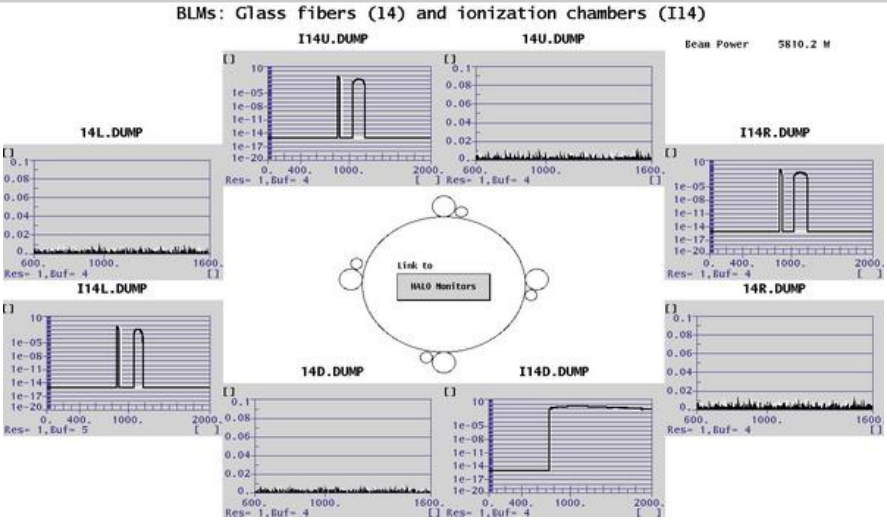
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:04:11-00.JPG

06.02.2011 16:04 ttflinac **ttflinac@:blm_overview_Exp_DUMP**



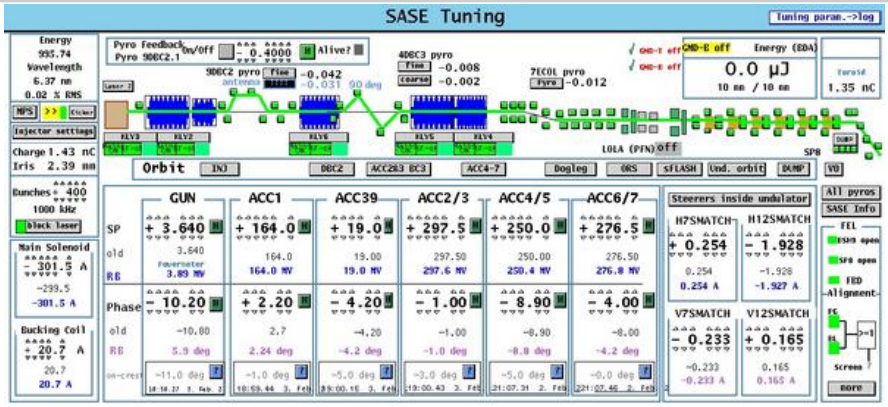
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:04:28-00.JPG

06.02.2011 16:04 ttflinac **ttflinac@:blm_overview_DUMP**



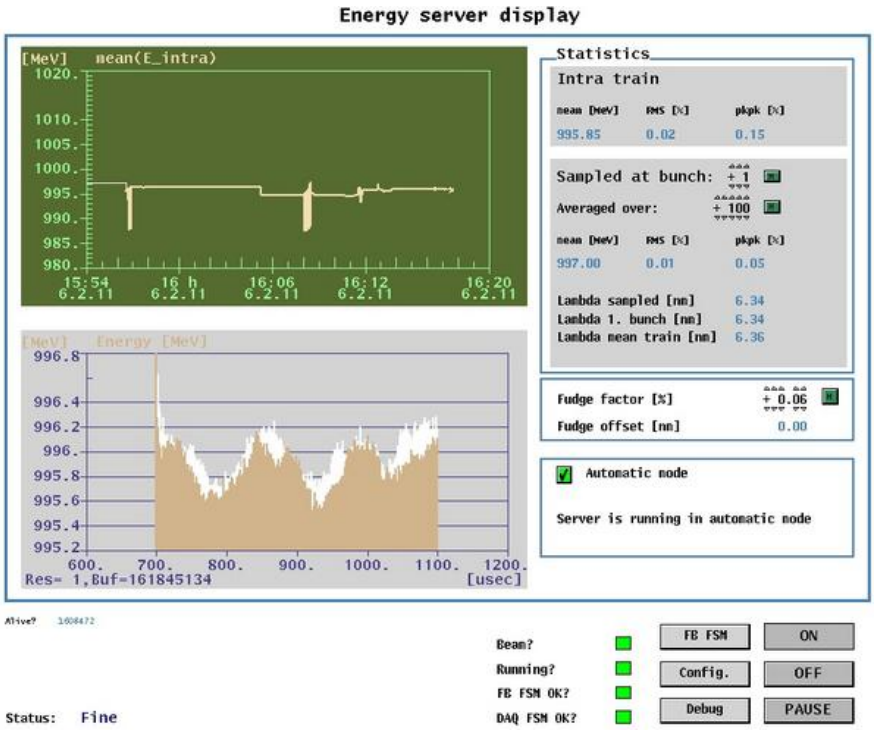
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:04:37-00.JPG

06.02.2011 16:10 ttflinac **ttflinac@:SASE_tuning**



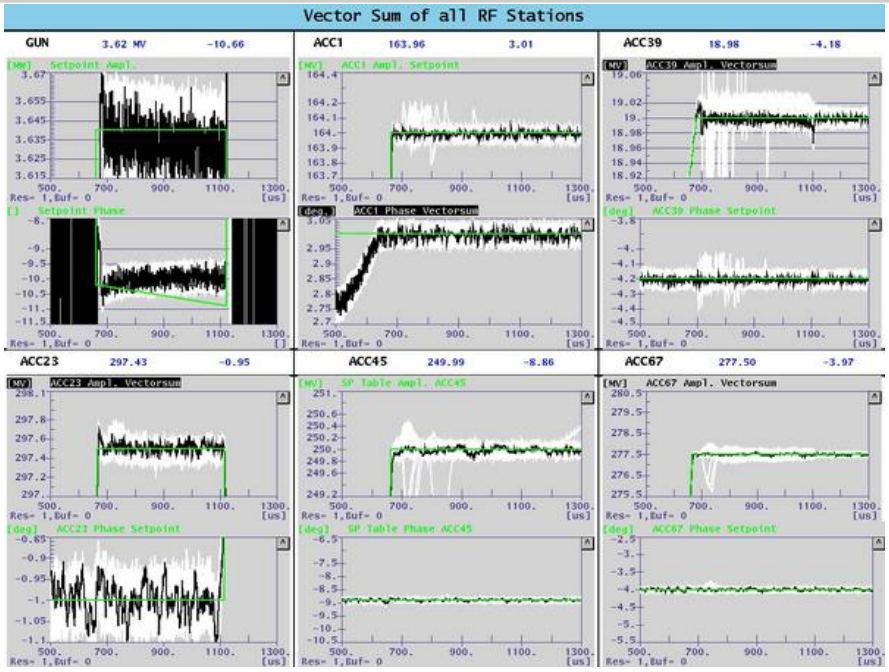
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:10:15-00.JPG

06.02.2011 16:17 ttflinac **ttflinac@:Energyfbm_display**



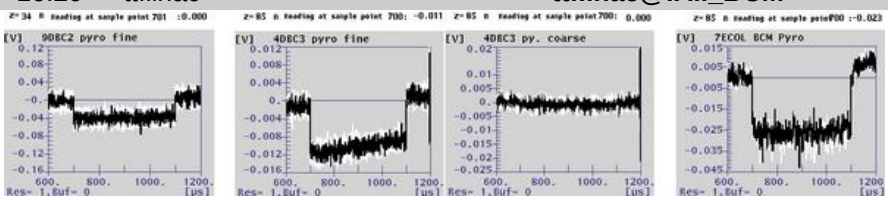
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:17:52-00.JPG

06.02.2011 16:20 ttflinac **ttflinac@:LLRF_OVERVIEW**



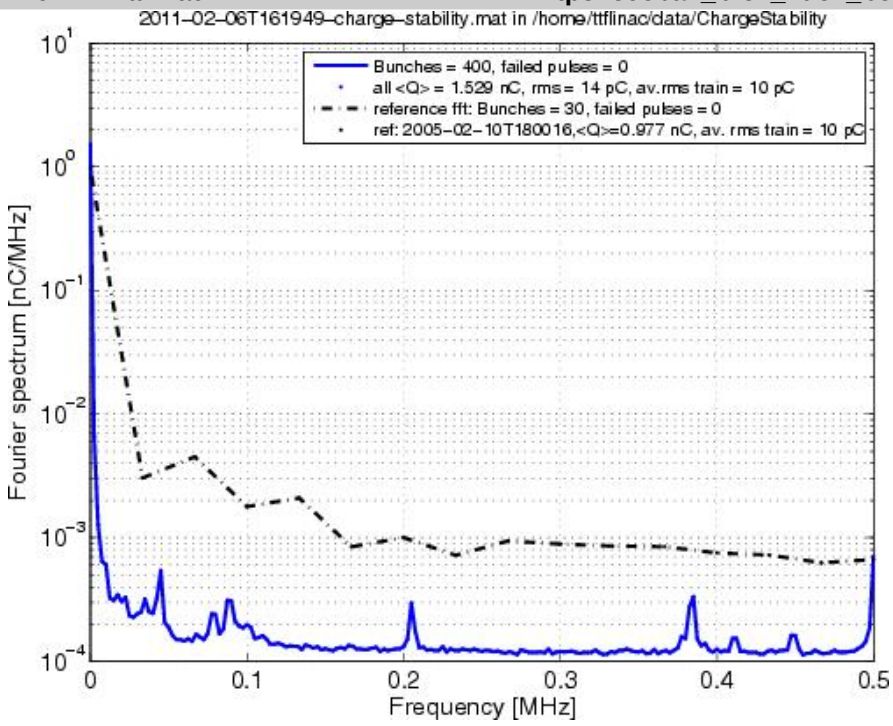
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:20:11-00.JPG

06.02.2011 16:20 ttflinac **ttflinac@:All_BCM**



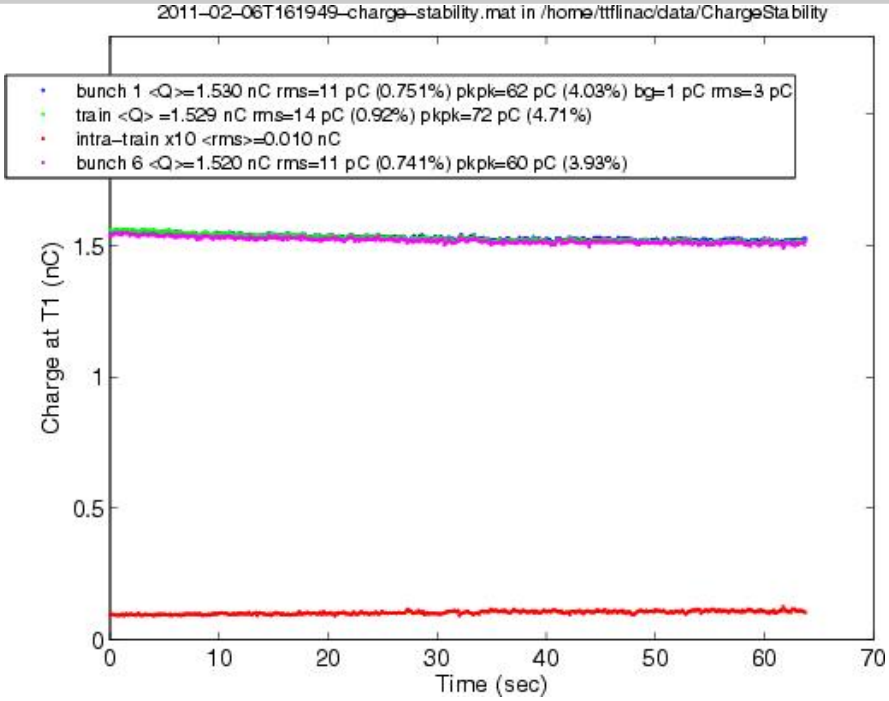
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:20:59-00.JPG

06.02.2011 16:21 ttflinac **tp51e06ba1_bfc7_4de4_bec0_d97ba6382d30.ps**



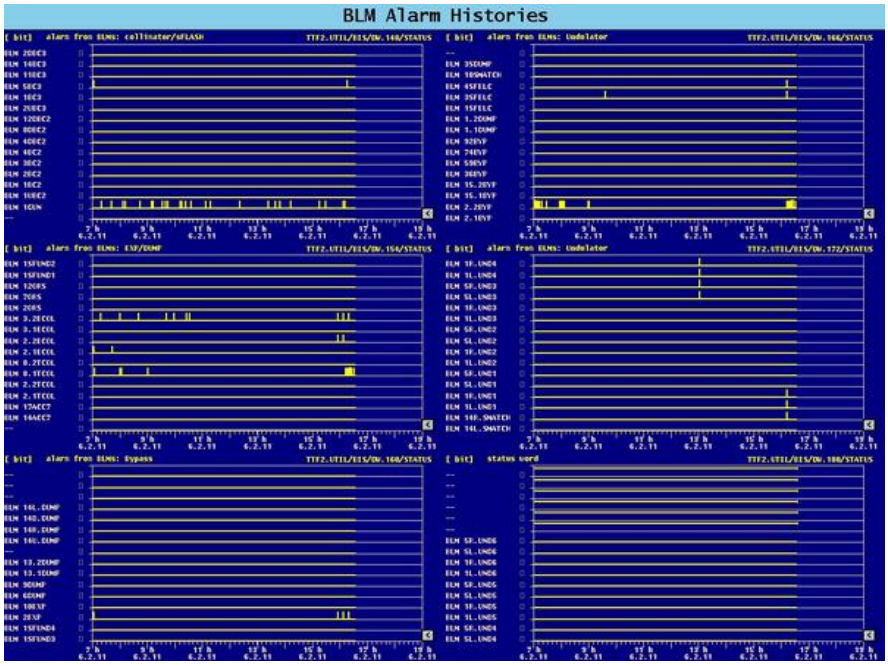
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:21:21-00.ps

06.02.2011 16:21 ttflinac **tpfbdb6ef5_eb28_48f2_b844_ca05546f9ed8.ps**



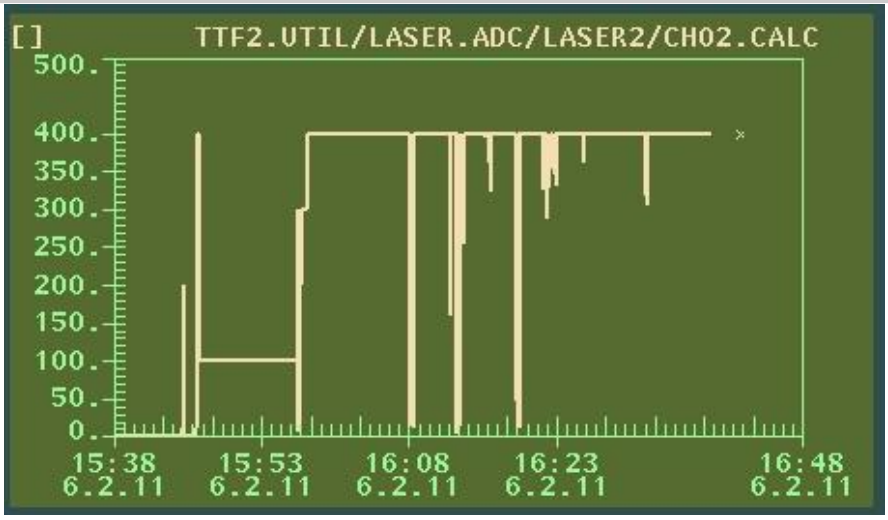
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:21:28-00.ps

06.02.2011 16:35 ttflinac **ttflinac@:blm_alarm_histories**



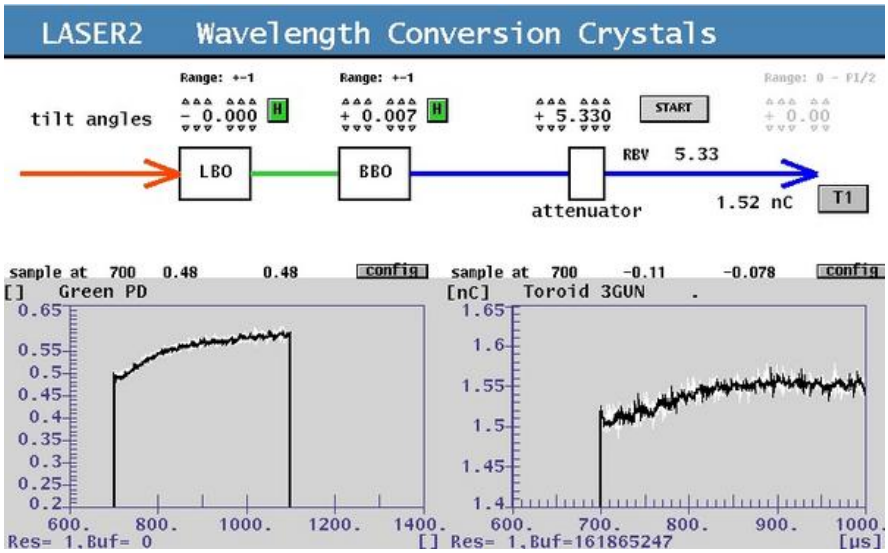
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:35:07-00.JPG

06.02.2011 16:42 ttflinac **ttflinac@:Plot_hist**



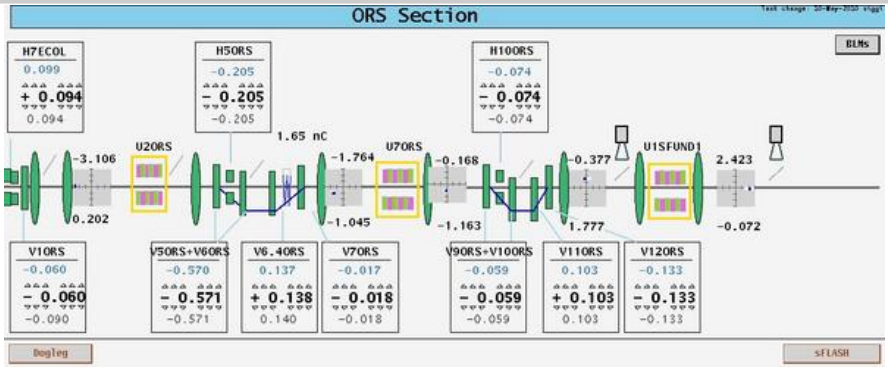
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:42:00-00.JPG

06.02.2011 16:51 ttflinac **ttflinac@:laser_crystal_tuning**



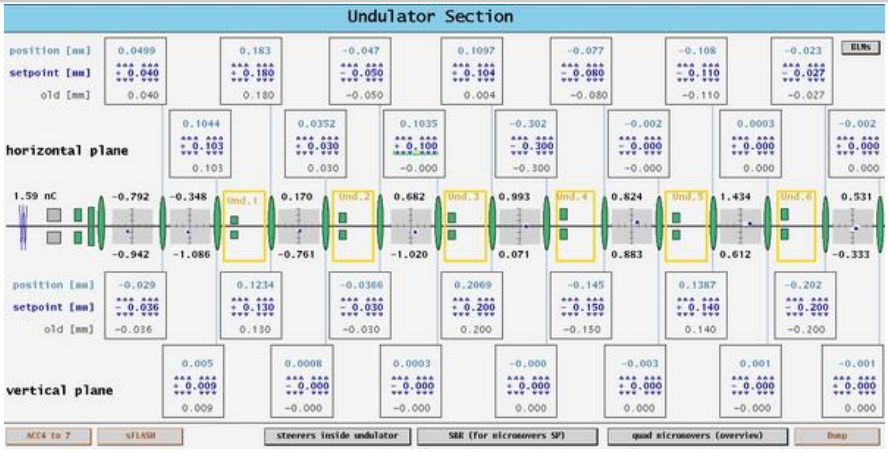
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T16:51:22-00.JPG

06.02.2011 17:57 ttflinac **ttflinac@:orbit_corr_ORS**



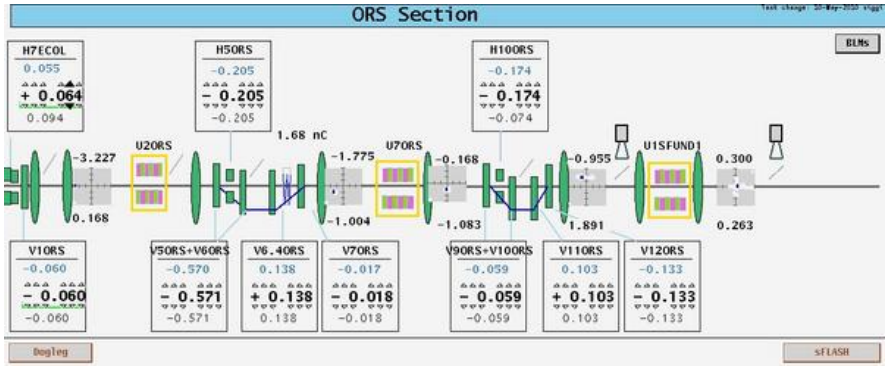
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T17:57:15-00.JPG

06.02.2011 18:18 ttflinac **ttflinac@:orbit_corr_undulator**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T18:18:06-00.JPG

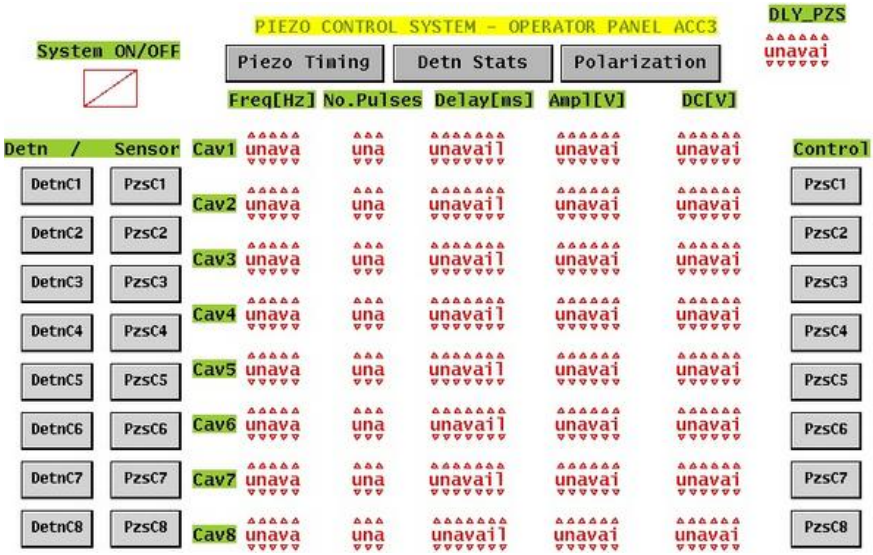
06.02.2011 18:21 ttflinac **ttflinac@:orbit_corr_ORS**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T18:21:17-00.JPG

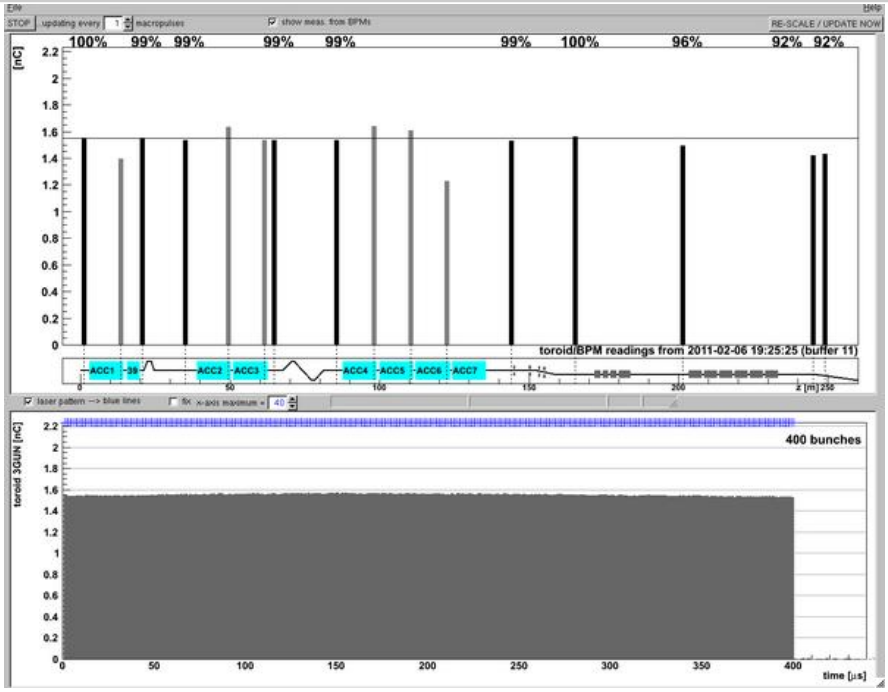
06.02.2011 18:40 Carwardine **Lost control of the piezos**

This is the second time today



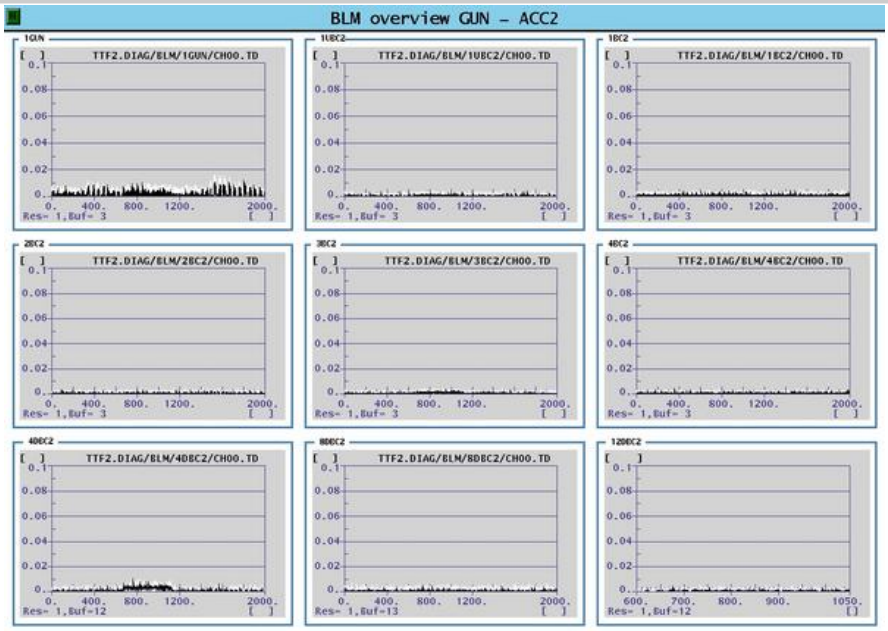
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T18:40:42-00.JPG

06.02.2011 19:25 ttflinac **toroid charge readings**



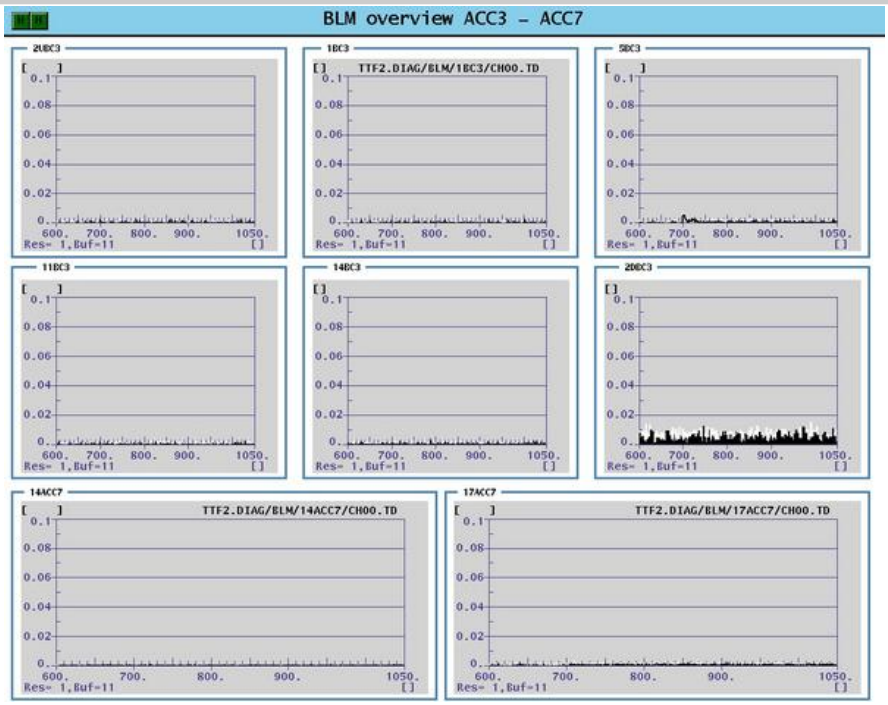
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:25:41-00.ps

06.02.2011 19:26 ttflinac **ttflinac@:blm_overview_from_GUN_to_ACC2**



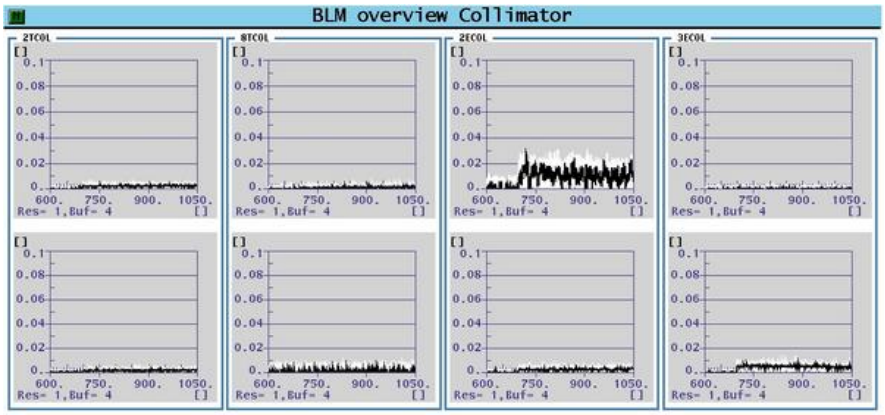
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:26:07-00.JPG

06.02.2011 19:26 ttflinac **ttflinac@:BLM_ACC3_ACC7**



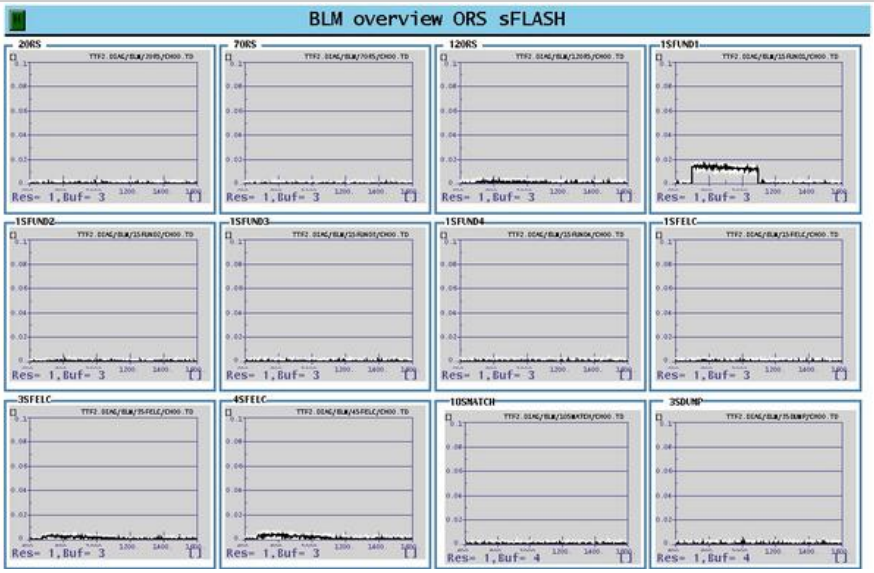
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:26:16-00.JPG

06.02.2011 19:26 ttflinac **ttflinac@:blm_overview_COL**



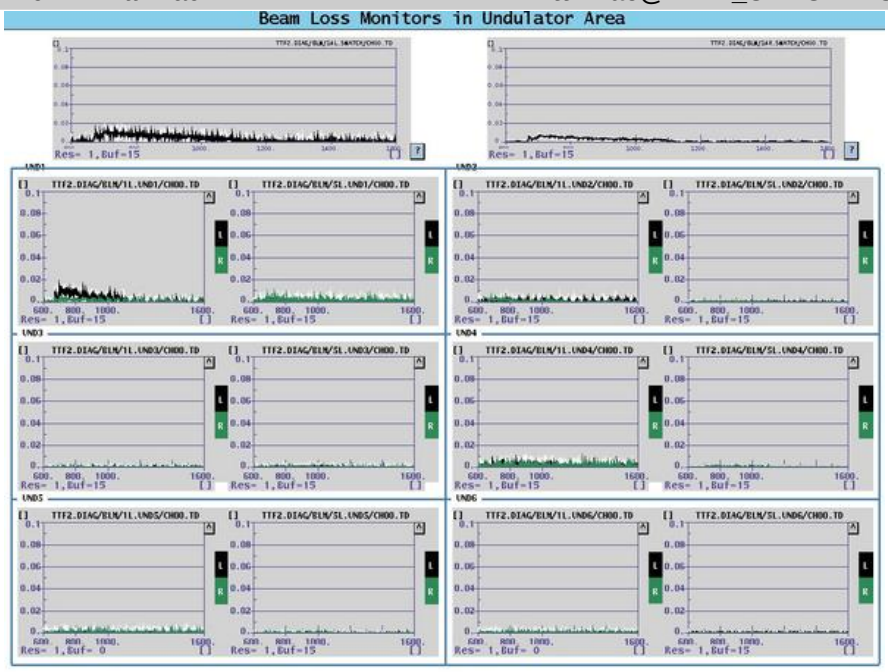
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:26:26-00.JPG

06.02.2011 19:26 ttflinac **ttflinac@:blm_overview_ORS**



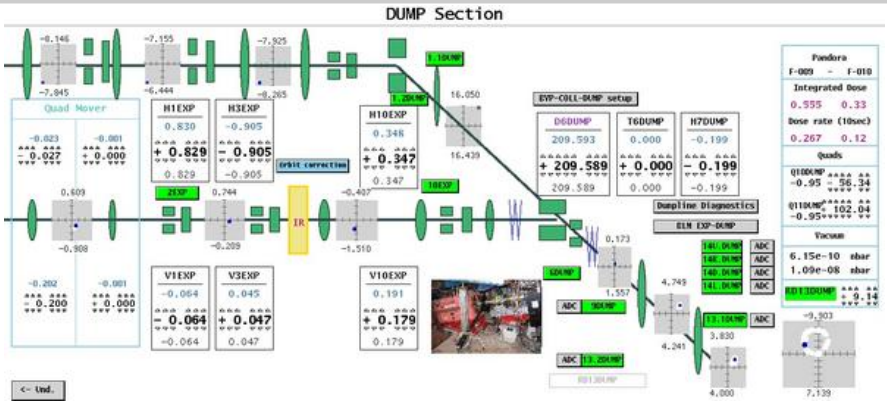
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:26:52-00.JPG

06.02.2011 19:27 ttflinac **ttflinac@:BLM_UNDULATORS**



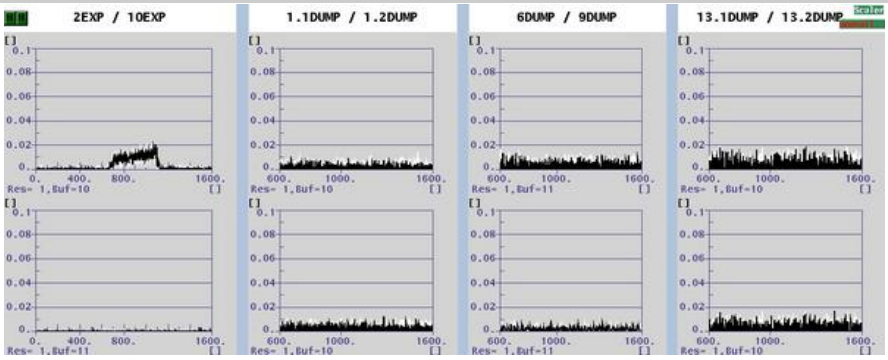
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:27:06-00.JPG

06.02.2011 19:27 ttflinac **ttflinac@:orbit_corr_dump**



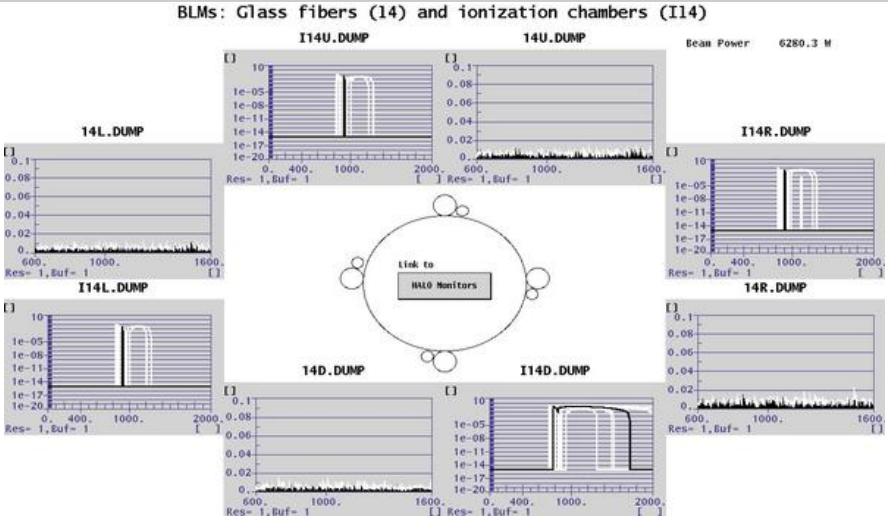
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:31:31-00.JPG

06.02.2011 19:27 ttflinac **ttflinac@:blm_overview_Exp_DUMP**



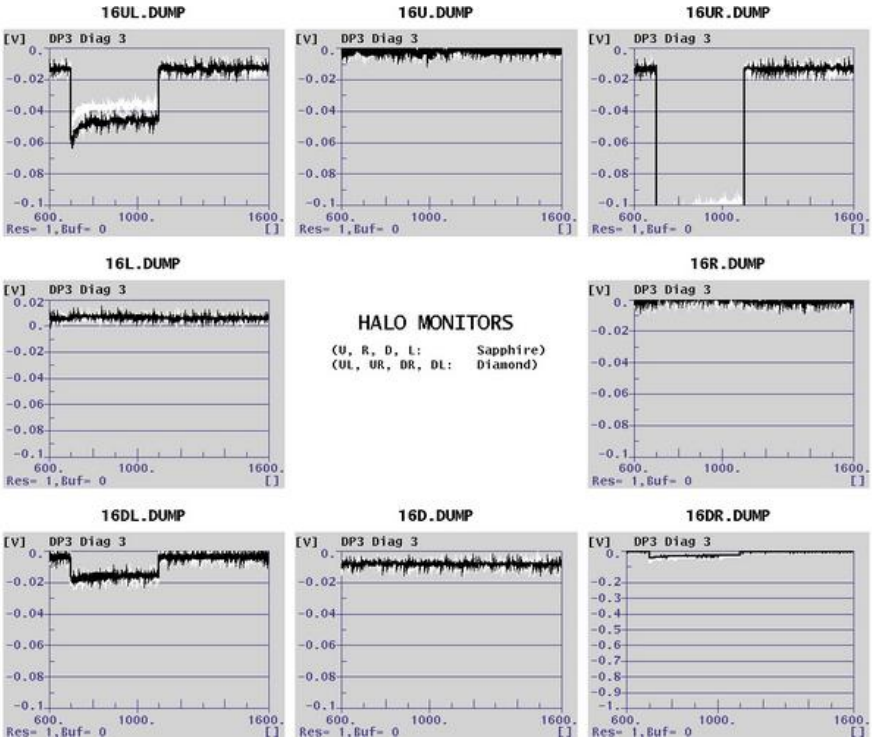
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:31:42-00.JPG

06.02.2011 19:27 ttflinac **ttflinac@:blm_overview_DUMP**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:31:58-00.JPG

06.02.2011 19:27 ttflinac **ttflinac@:blm_Halo**

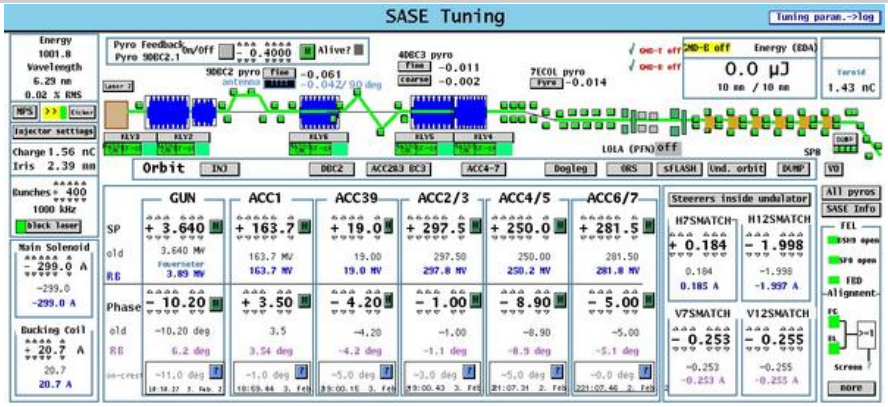


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:32:06-00.JPG

06.02.2011 19:28 ttflinac **ttflinac@:Plot_hist**

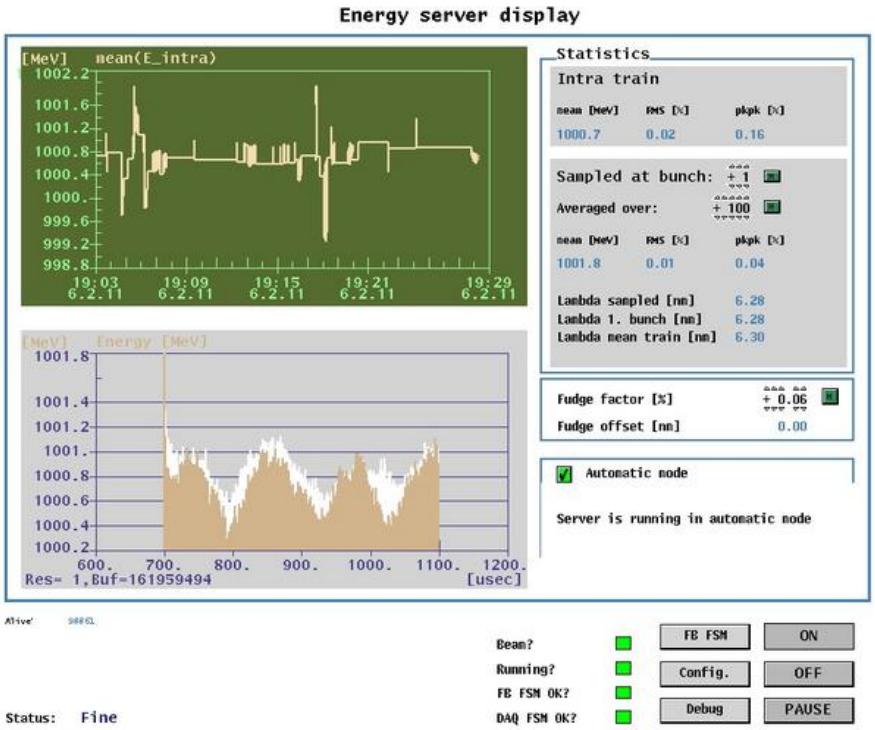
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:28:10-00.JPG

06.02.2011 19:28 ttflinac **ttflinac@:SASE_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:28:16-00.JPG

06.02.2011 19:28 ttflinac **ttflinac@:Energyfbm_display**

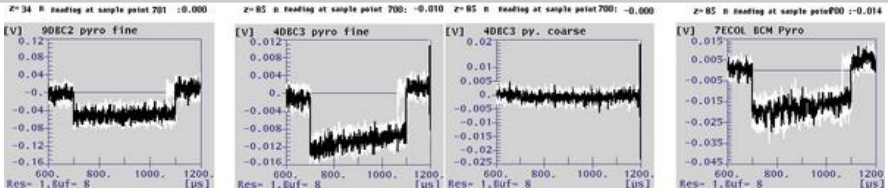


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:28:33-00.JPG

06.02.2011 19:28 Klose **DAQ is working again**

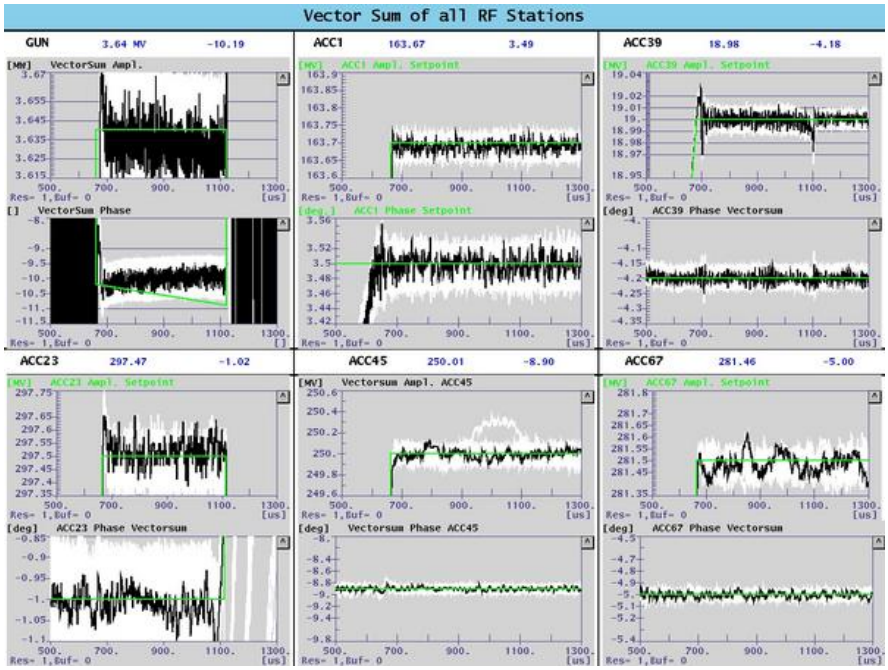
Since this morning around 09.00h, the DAQ stopped saving data. V. Rybnikov patched this, by setting a watch dog for the main memory. Tomorrow, the DAQ will be restarted.

06.02.2011 19:29 ttflinac **ttflinac@:All_BCM**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:29:26-00.JPG

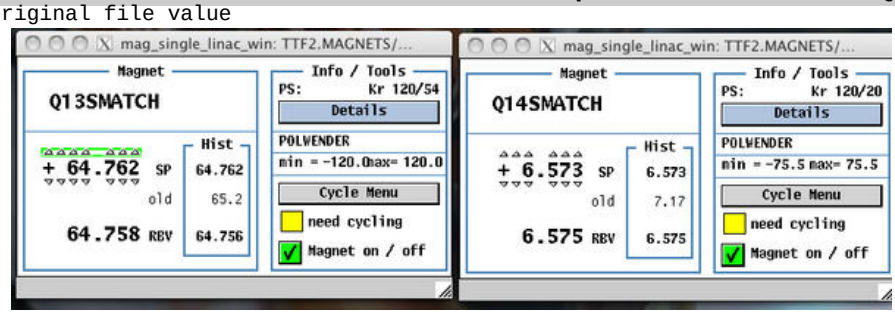
06.02.2011 19:30 ttflinac **ttflinac@:LLRF_OVERVIEW**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:30:46-00.JPG

06.02.2011 19:32 Klose. Schreiber, vogtm **400 bunches 1.5nC 92% to dump BLMs optimized / had to tweak Q13/14SMATCH**

old--value = original file value



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:37:11-00.png

06.02.2011 19:33 ttflinac **Main linac parameters**

400 bunches 1.5nC 92% to dump BLMs optimized / had to tweak Q13/14SMATCH

Laser
Number of bunches 400
Bunch frequency ..... 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ..... 0.0030 ms
Pump current_3 ..... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.68 ms
Attenuator SP 5.40
Iris diameter ..... 17072 steps
Iris diameter ..... 2.39 mm

Gun
Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.64
VS ampl. 18.33
Phase SP ..... -10.20 deg
VS phase ..... 6.23 deg
Pfwd (peak) ..... 3.879 MW
Prefl (peak) ..... 2.922 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.332 MW
Prefl sample point 720
Prefl (at sample point) 5.812 MW
Flat top ..... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -299.04 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... 1.58 nC
DC kicker delay ..... 6.80 ms
DC kicker HV ..... not local
DC kicker HV ..... disabled
DC kicker HV ..... off
DC kicker SP ..... 60.00 V
DC kicker start ..... 124.00 ns

ACC1
Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 163.70

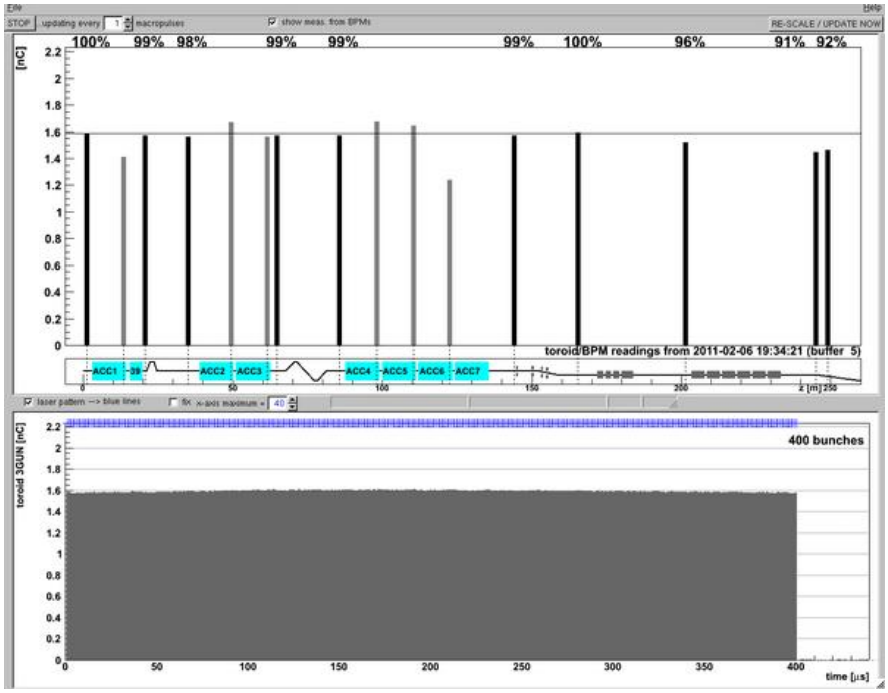
ACC39
Feedforward/Feedback ... on/on
Feedback gain 10.0
Pfwd SP 19.00

```
Pfwd RBV ............... 163.68                Phase SP ............... -4.20 deg
Phase SP ............... 3.50 deg              Pfwd C1.ACC39 .......... <error>
Phase RBV .............. 3.52 deg              Flat top ............... 800 us
Pfwd C1.ACC1 ........... 185.8 kW
Pfwd C5.ACC1 ........... 176.6 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0698 V
Radiator 9DBC2 ......... out
Slow phase feedback .... off
Slow ph. FB target/gain  -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)
ACC2/3                                        ACC4/5
Feedforward/Feedback ... on/on                Feedforward/Feedback ... on/on
Feedback gain .......... 2.0                  Feedback gain .......... 40.0
Pfwd SP ................ 297.50               Pfwd SP ................ 250.00
Pfwd RBV ............... 297.91               Pfwd RBV ............... 250.23
Phase SP ............... -1.00 deg            Phase SP ............... -8.90 deg
Phase RBV .............. -1.02 deg            Phase RBV .............. -8.98 deg
Pfwd C5.ACC2 ........... 126.87 kW            Pfwd C1.ACC4 ........... 116.37 kW
Pfwd C1.ACC3 ........... 218.34 kW            Pfwd C2.ACC5 ........... 91.34 kW
Flat top ............... 450 us               Pfwd C1.ACC6 ........... 0.61 kW
Dipole BC3 (RBV) ....... 56.00 A               Flat top ............... 800 us
Pyro 4DBC3.1 ........... -0.0085 V
Pyro 4DBC3.3 ........... 0.0018 V
Radiator 4DBC3 ......... out
ACC6/7                                        Bypass
Feedforward/Feedback ... on/on                Dipole D1BYP (RBV) ..... 0.00 A
Feedback gain .......... 50.0                  Energy bypass .......... 1211.4 MeV
Pfwd SP ................ 281.50               RF vector sum ALL ...... 686.4 MeV
Pfwd RBV ............... 281.95               Charge 16BYP ........... 0.00 nC
Phase SP ............... -5.00 deg
Phase RBV .............. -5.06 deg
Pfwd C1.ACC6 ........... 163.96 kW
Pfwd C1.ACC7 ........... 186.23 kW
Flat top ............... 800 us
Collimator                                    Undulator
Dipole D1ECOL (RBV) .... 176.89 A             1SFUND1 gap RBV ........ 220.0 mm
Energy dogleg .......... 1000.8 MeV           1SFUND2 gap RBV ........ 220.0 mm
Charge 7ORS ............ 1.59 nC              1SFUND3 gap RBV ........ 220.0 mm
                                              1SFUND4 gap RBV ........ 180.0 mm
Dump                                          Feedbacks
Dipole D9SMATCH (RBV) .. 0.00 A               Charge feedback gain ... <error>
Dipole D1DUMP (RBV) .... 0.00 A               Charge feedback SP ..... <error>
Dipole D6DUMP (RBV) .... 209.59 A             PTO feedback ........... on
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.45 nC
Photon beamline
Aperture 1 ............. 10 mm
Offset h/v ............. 0/-1 mm
Aperture 2 ............. 10 mm
Offset h/v ............. 1/0 mm
```

```
Status saved in machine file 2011-02-06T19_32_58+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-06T193258
```

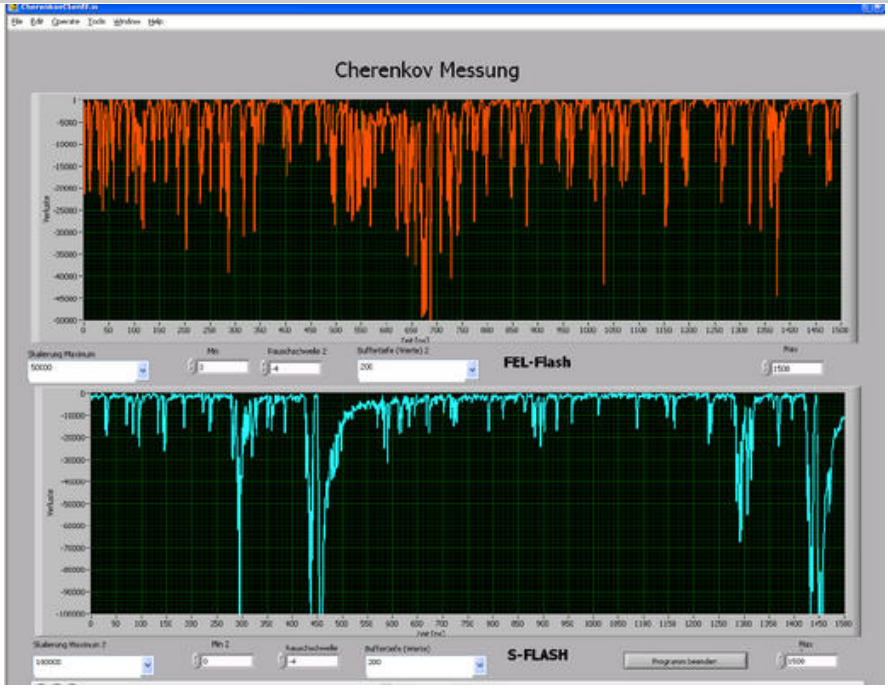
```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110206T193258.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110206T193258.sr
from computer: flashbkr3.desy.de
```

06.02.2011 19:34 ttflinac **toroid charge readings**



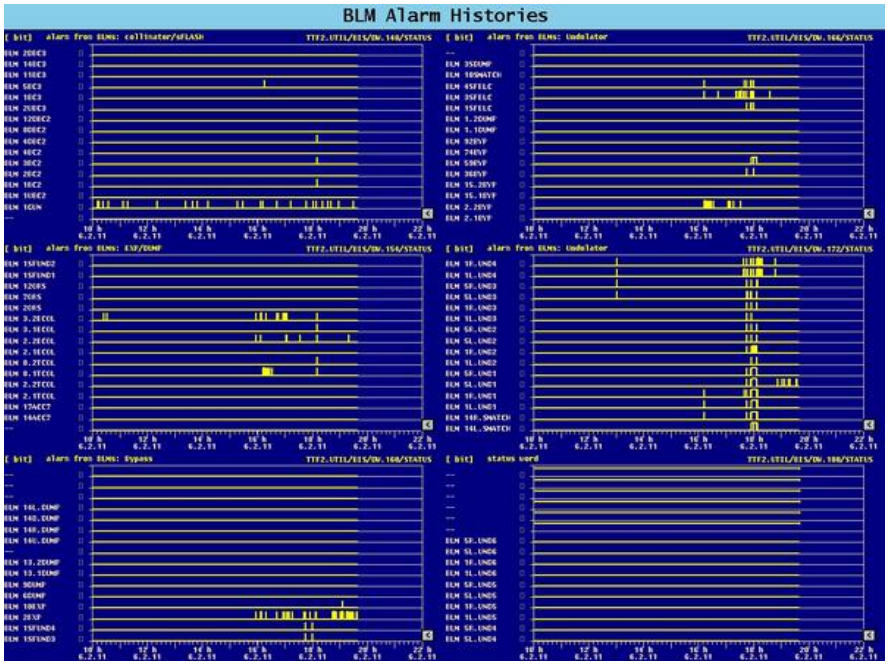
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:34:38-00.ps

06.02.2011 19:36 Klose. Schreiber, vogtm **Cherenkov SFLASH / FLASH**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:36:20-00.png

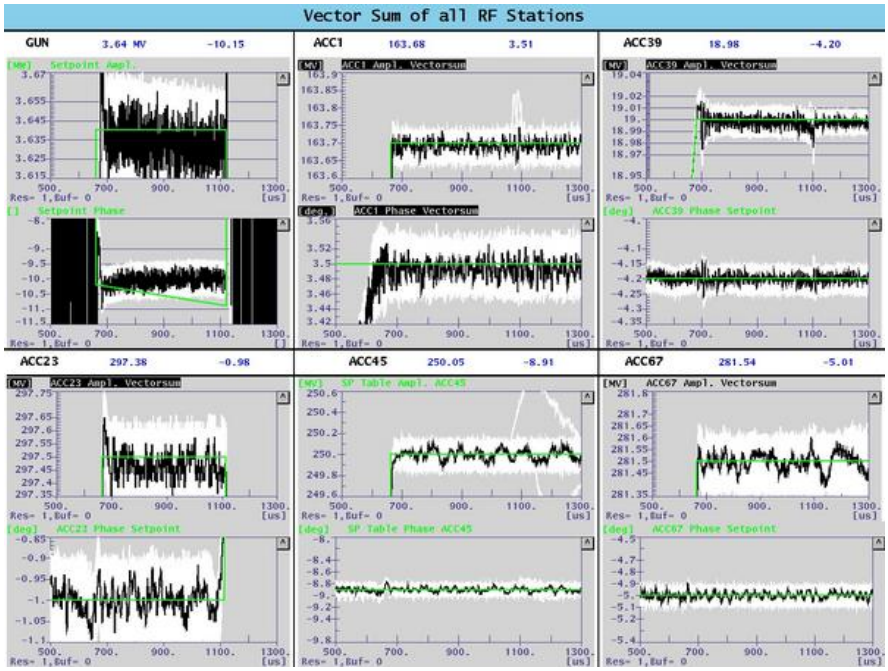
06.02.2011 19:40 ttflinac **ttflinac@:blm_alarm_histories**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:40:18-00.JPG

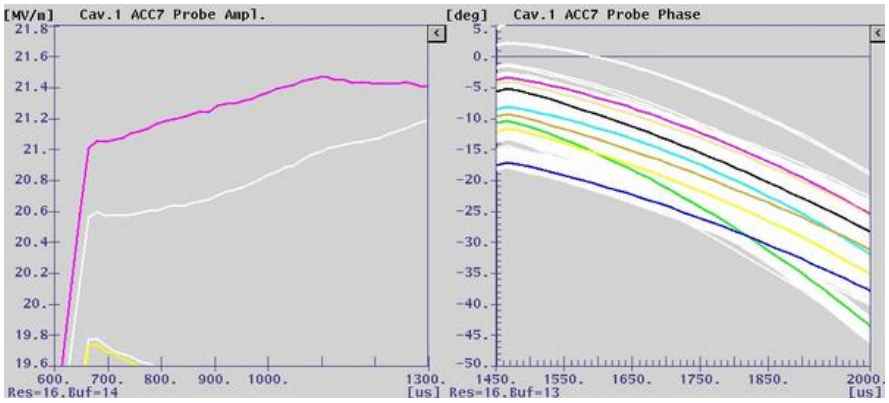
06.02.2011 19:48 S. Schreiber, M. Vogt **ttflinac@:LLRF_OVERVIEW**

transients visible



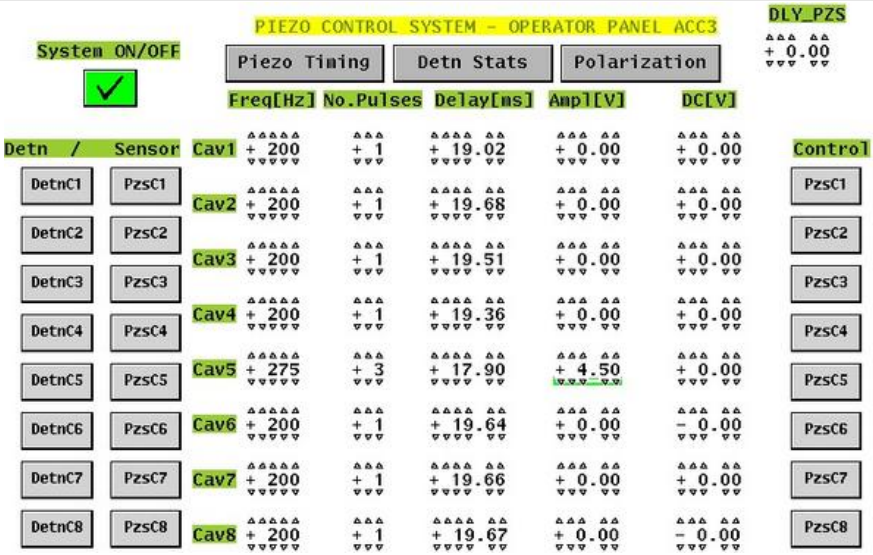
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:48:31-00.JPG

06.02.2011 19:49 ttflinac **ttflinac@:9mA_probe**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:49:19-00.JPG

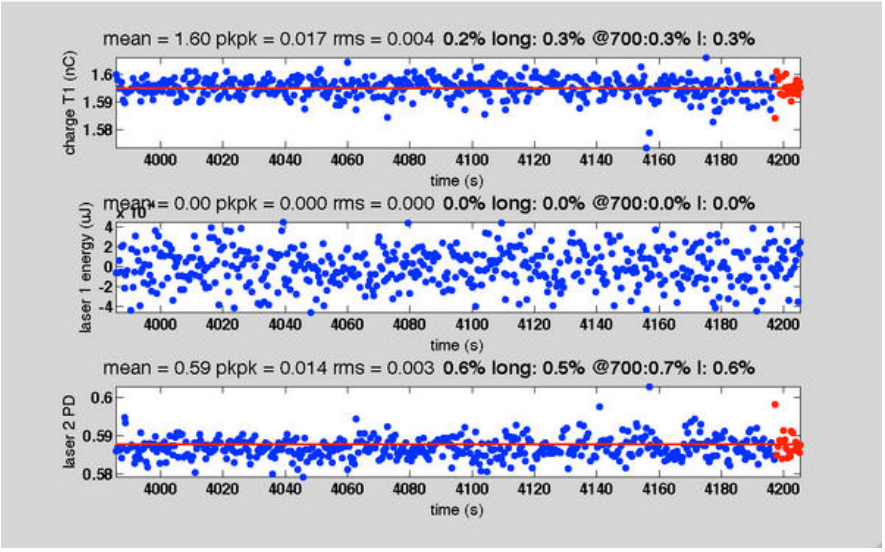
06.02.2011 19:49 ttflinac **ttflinac@:piezo_ctl_acc**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:49:42-00.JPG

06.02.2011 19:55 S. Schreiber **charge/laser stability**

first numbers average over train @700 from bunch 1 only



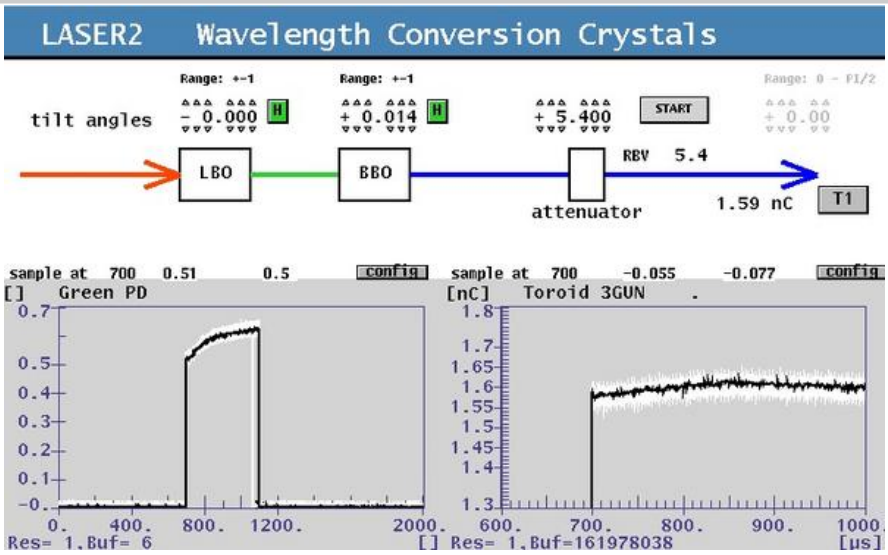
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:55:14-00.png

06.02.2011 19:57 S. Schreiber, M. Vogt, K. Klose **status**

we finish loss tuning

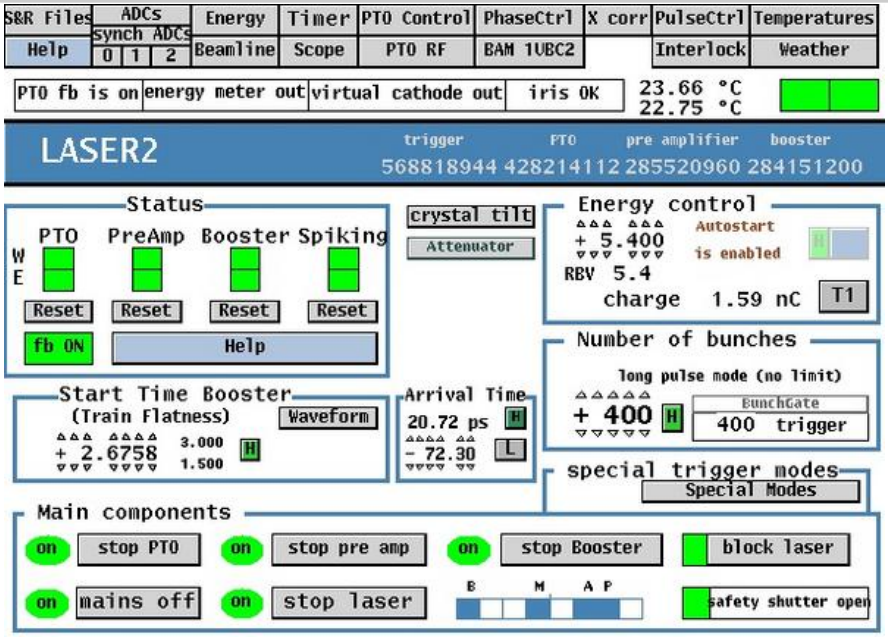
```
runs stable now, losses are somewhat smaller
```

06.02.2011 19:59 ttflinac **ttflinac@:laser_crystal_tuning**



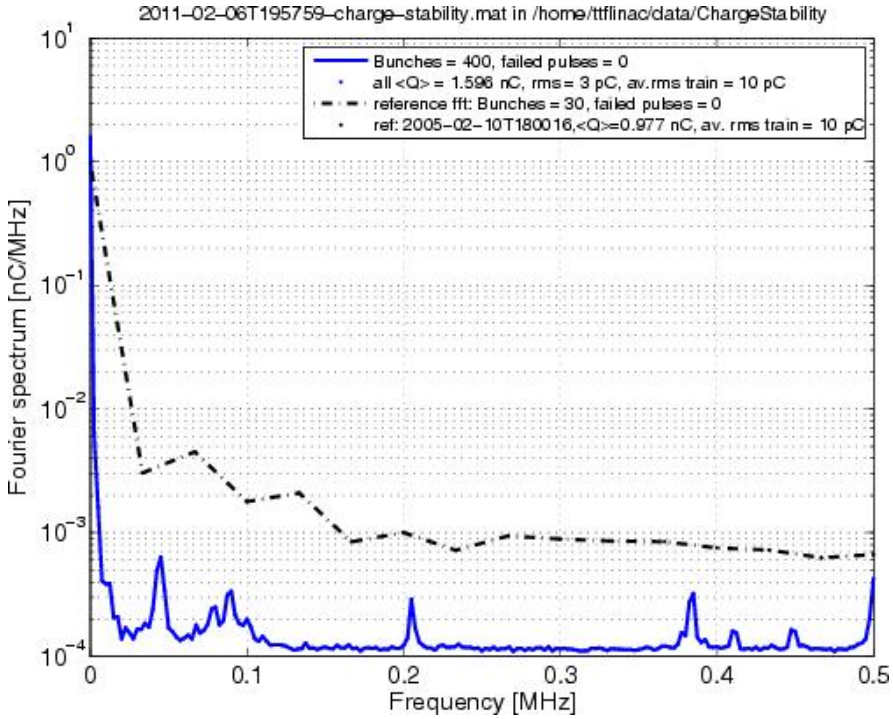
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:59:24-00.JPG

06.02.2011 19:59 ttflinac **ttflinac@:laser2_control**



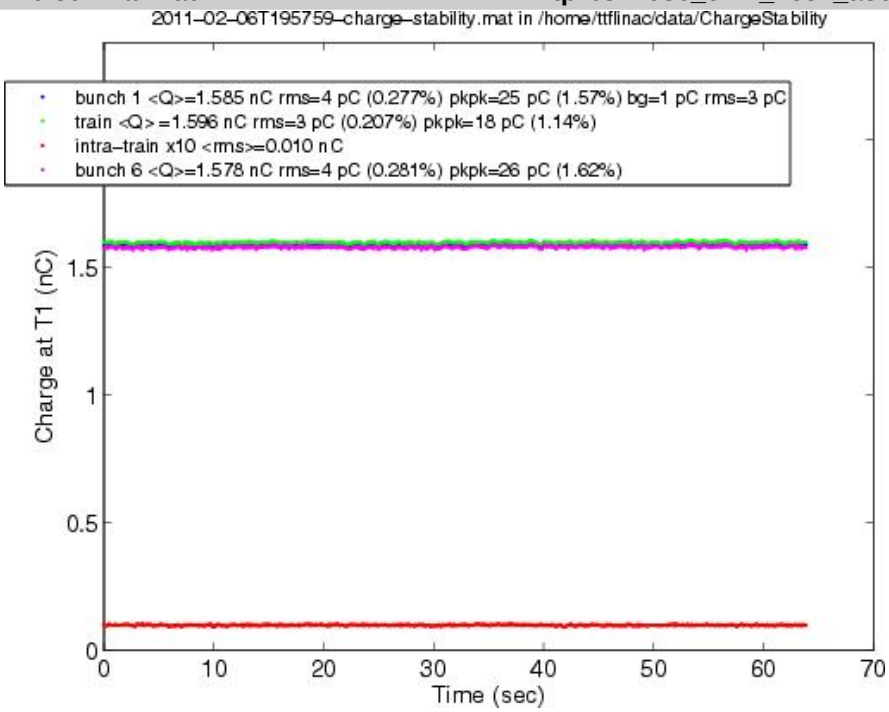
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:59:31-00.JPG

06.02.2011 19:59 ttflinac **tp0604768d_34e3_4254_bb61_4e4c96cf85d7.ps**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:59:38-00.ps

06.02.2011 19:59 ttflinac **tpfb841586_07f1_4e51_a861_fcadb4b744dc.ps**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T19:59:44-00.ps

06.02.2011 20:15 ttflinac **Energy scaling of magnet settings**

```
Energy scaling from machine file :
  timestamp: 2011-02-06T19:32:58+01  (ID = 14577)
  author(s): Klose, Schreiber, vogtm
  comment  : 400 bunches 1.5nC 92% to dump BLMs optimized / had to tweak Q13/14SMATCH
  beam energy (UND)  = 1000.8 MeV
  photon wavelength  = 6.29 nm
  SASE pulse energy  = 0.0 microJ
New file (scaled)  :
  timestamp: 2011-02-06T20:15:04+01
  author(s): Klose, Schreiber, vogtm
```

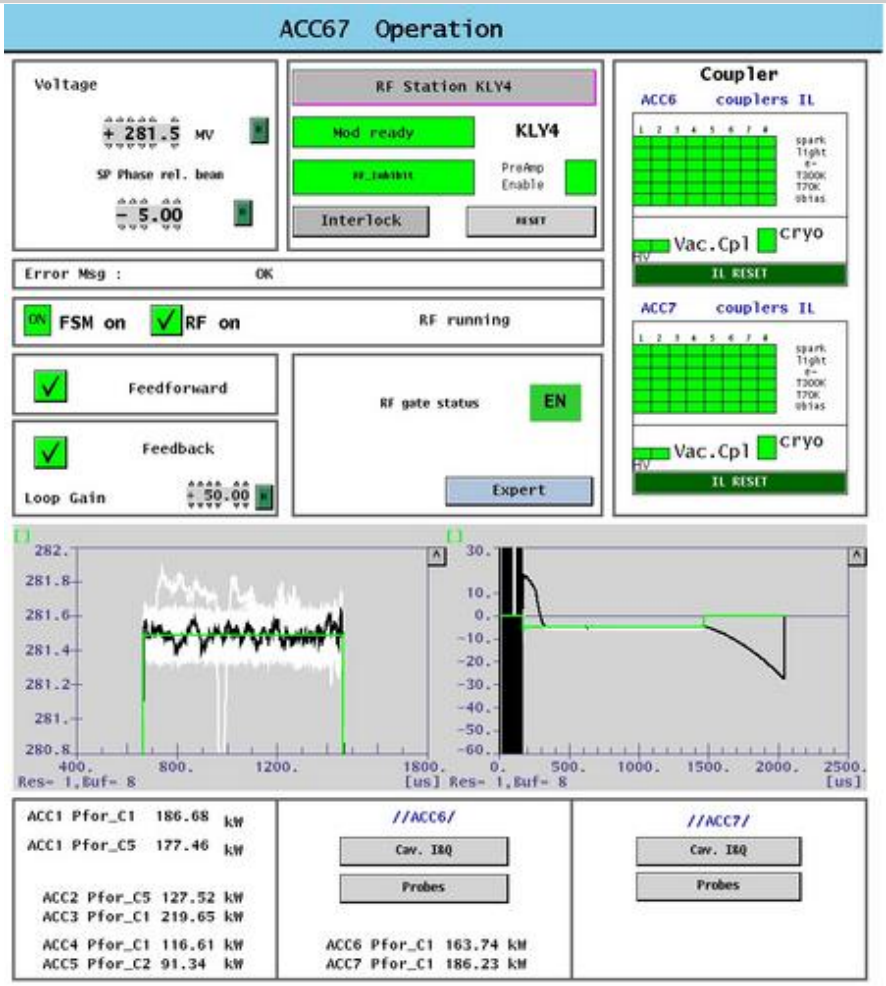
comment : E=1000.52924 MeV (scaled from E=1000.52924 MeV, file=2011-02-06T19:32:58+01 , ID=14577)
beam energy (UND) = 1000.5 MeV
photon wavelength = 6.29 nm
(all energies in MeV)

Energy at...	prev. file	scaled file	change	change(%)
E(BC3)	450.0	450.0	0	0
E(9ACC4)	575.6	624.0	48.4	8.4%
E(9ACC5)	709.1	809.0	99.9	14.1%
E(9ACC6)	845.0	898.3	53.3	6.3%
E(UND)	1000.5	1000.5	0.0	0.0%

Energy gain	prev. file	scaled file	change
Egain(ACC45)	259.1	359.0	99.9
Egain(ACC67)	291.4	191.5	-99.9

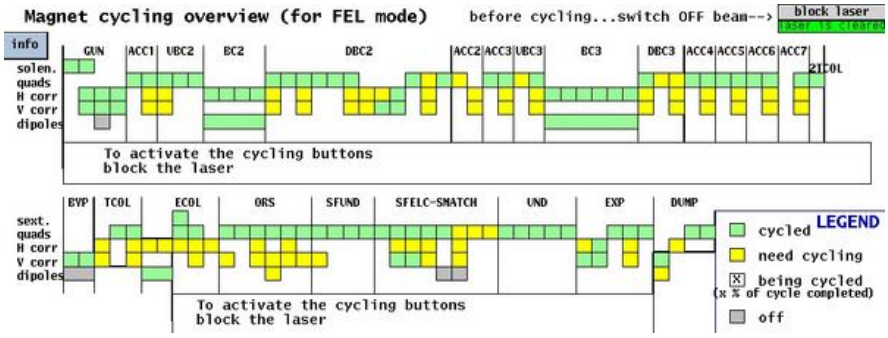
from computer: flashbkr3.desy.de

06.02.2011 20:26 ttflinac **ttflinac@:SIMCON_Operation**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:26:36-00.JPG

06.02.2011 20:58 Klose **Start Docu Machine Status for energy distribution in ACC45 (345MV) and ACC67 (183.5MV)**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:58:06-00.JPG

06.02.2011 20:58 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: NaN MeV / NaN nm
Charge:              1.61 nC
Main solenoid:       -301.0 A
Bucking coil:        +20.7 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

	GUN	ACC1	ACC39	ACC2/3	ACC4/5	ACC6/7
Power/Gradient	+3.640	+163.70	+19.00	+297.50	+350.00	+181.50
Readback	3.89	163.7	19.0	297.8	350.5	182.0
Phase	-10.20	+3.50	-4.20	-1.00	-8.90	-5.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	6.2	3.5	-4.2	-1.1	-8.9	-5.2

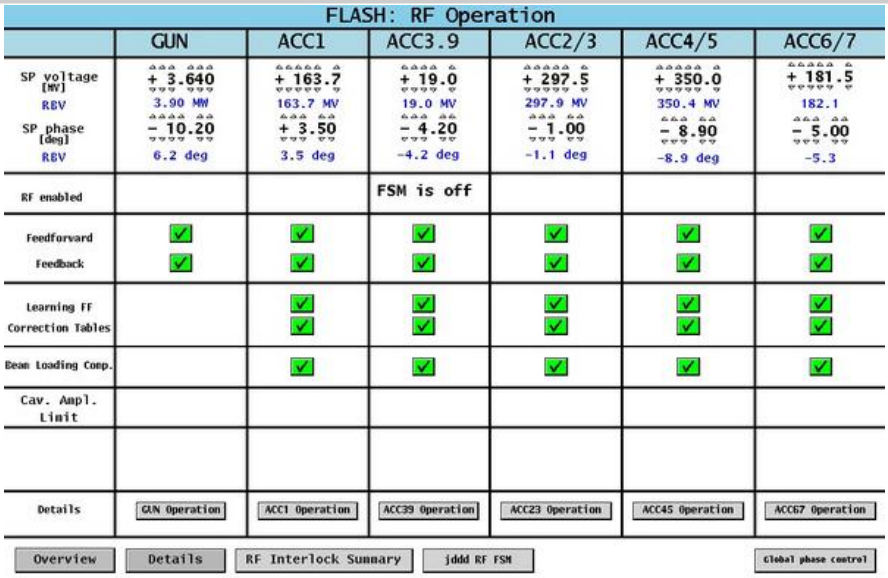
Undulator steerers and aircoils

H7SMATCH	H12SMATCH
+0.184	**-1.998**
V7SMATCH	**V12SMATCH**
-0.183	**-1.998**

Intra-undulator steerers

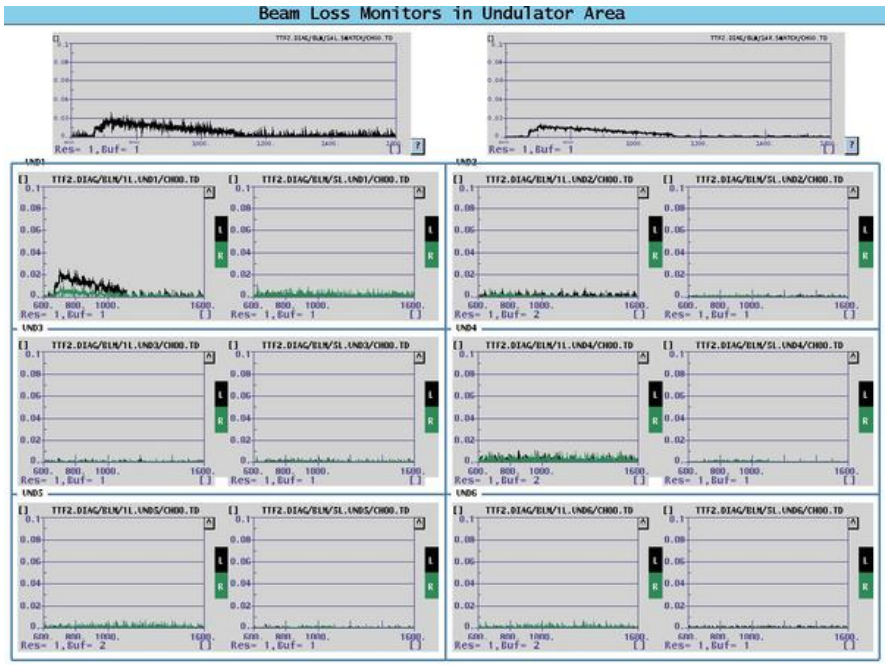
H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.90	**-4.30**	**-4.90**	**-4.70**	**-4.90**	**-5.00**

06.02.2011 20:58 ttflinac **ttflinac@:RF_OPERATION**



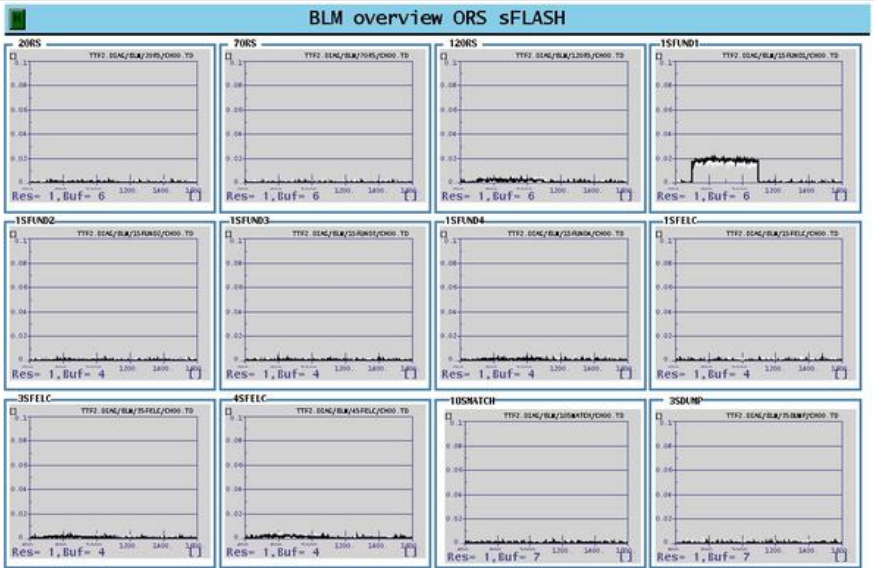
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:58:19-00.JPG

06.02.2011 20:58 ttflinac **ttflinac@:BLM_UNDULATORS**



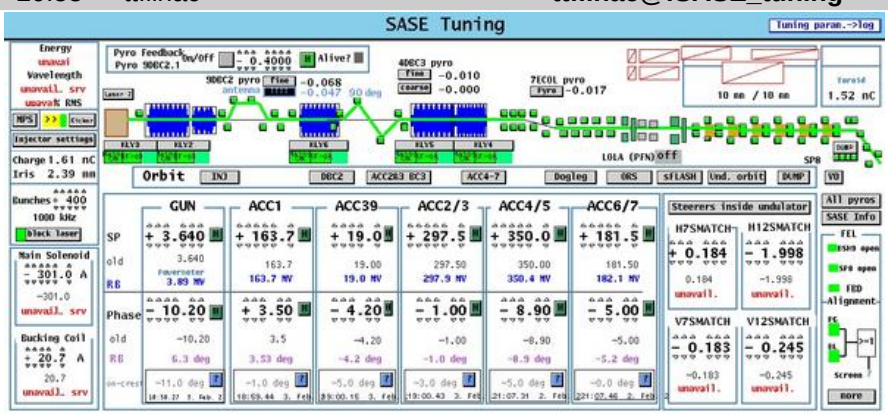
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:58:27-00.JPG

06.02.2011 20:58 ttflinac **ttflinac@:blm_overview_ORS**



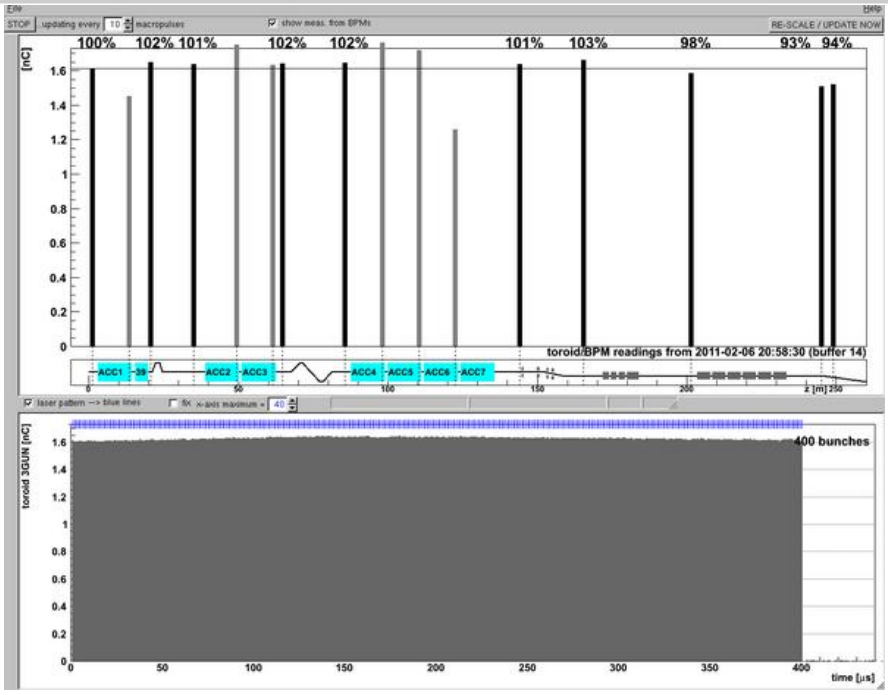
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:58:37-00.JPG

06.02.2011 20:58 ttflinac **ttflinac@:SASE_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:58:45-00.JPG

06.02.2011 20:58 ttflinac **toroid charge readings**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:58:53-00.ps

06.02.2011 20:59 ttflinac **Main linac parameters**

400 bunches 1.5nC 1MHz ACC45 350 MeV ACC67 180 MeV

Laser
Number of bunches 400
Bunch frequency ..... 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ..... 0.0030 ms
Pump current_3 ..... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.68 ms
Attenuator SP 5.42
Iris diameter ..... 17072 steps
Iris diameter ..... 2.39 mm

Gun
Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.64
VS ampl. 18.32
Phase SP ..... -10.20 deg
VS phase ..... 6.23 deg
Pfwd (peak) ..... 3.894 MW
Prefl (peak) ..... 2.927 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.329 MW
Prefl sample point 720
Prefl (at sample point) 5.709 MW
Flat top ..... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -301.03 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... 1.62 nC
DC kicker delay ..... 6.80 ms
DC kicker HV ..... not local
DC kicker HV ..... disabled
DC kicker HV ..... off
DC kicker SP ..... 60.00 V
DC kicker start ..... 124.00 ns

ACC1
Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 163.70
Pfwd RBV 163.66
Phase SP ..... 3.50 deg
Phase RBV ..... 3.51 deg
Pfwd C1.ACC1 ..... 186.9 kW
Pfwd C5.ACC1 ..... 177.7 kW
Flat top ..... 800 us
Dipole BC2 (RBV) ..... 73.11 A
Pyro 9DBC2.1 ..... -0.0689 V
Radiator 9DBC2 ..... out
Slow phase feedback .... off
Slow ph. FB target/gain -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)

ACC39
Feedforward/Feedback ... on/on
Feedback gain 10.0
Pfwd SP 19.00
Phase SP ..... -4.20 deg
Pfwd C1.ACC39 ..... <error>
Flat top ..... 800 us

ACC2/3
Feedforward/Feedback ... on/on
Feedback gain 2.0

ACC4/5
Feedforward/Feedback ... on/on
Feedback gain 40.0

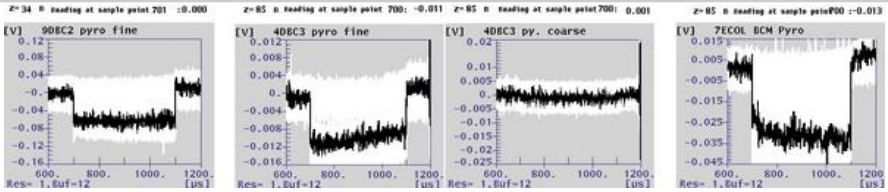
```
Pfwd SP ............... 297.50
Pfwd RBV .............. 297.83
Phase SP .............. -1.00 deg
Phase RBV ............. -1.11 deg
Pfwd C5.ACC2 .......... 126.44 kW
Pfwd C1.ACC3 .......... 219.00 kW
Flat top .............. 450 us
Dipole BC3 (RBV) ...... 56.00 A
Pyro 4DBC3.1 .......... -0.0123 V
Pyro 4DBC3.3 .......... 0.0014 V
Radiator 4DBC3 ........ out
ACC6/7
Feedforward/Feedback ... on/on
Feedback gain ......... 50.0
Pfwd SP ............... 181.50
Pfwd RBV .............. 181.82
Phase SP .............. -5.00 deg
Phase RBV ............. -5.14 deg
Pfwd C1.ACC6 .......... 82.60 kW
Pfwd C1.ACC7 .......... 91.77 kW
Flat top .............. 800 us
Collimator
Dipole D1ECOL (RBV) ... 176.89 A
Energy dogleg ......... <error>
Charge 7ORS ........... 1.67 nC

Dump
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) ... 0.00 A
Dipole D6DUMP (RBV) ... 209.60 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP .......... 1.53 nC
Photon beamline
Aperture 1 ............ 10 mm
Offset h/v ............ 0/-1 mm
Aperture 2 ............ 10 mm
Offset h/v ............ 1/0 mm
```

```
Pfwd SP ............... 350.00
Pfwd RBV .............. 350.41
Phase SP .............. -8.90 deg
Phase RBV ............. -8.87 deg
Pfwd C1.ACC4 .......... 157.21 kW
Pfwd C2.ACC5 .......... 172.30 kW
Pfwd C1.ACC6 .......... 0.61 kW
Flat top .............. 800 us

Bypass
Dipole D1BYP (RBV) .... 0.00 A
Energy bypass ......... <error>
RF vector sum ALL ..... <error>
Charge 16BYP .......... -0.00 nC

Undulator
1SFUND1 gap RBV ....... 220.0 mm
1SFUND2 gap RBV ....... 220.0 mm
1SFUND3 gap RBV ....... 220.0 mm
1SFUND4 gap RBV ....... 180.0 mm
Feedbacks
Charge feedback gain ... <error>
Charge feedback SP .... <error>
PTO feedback .......... on
```

```
Status saved in machine file 2011-02-06T20_58_39+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-06T205839
```

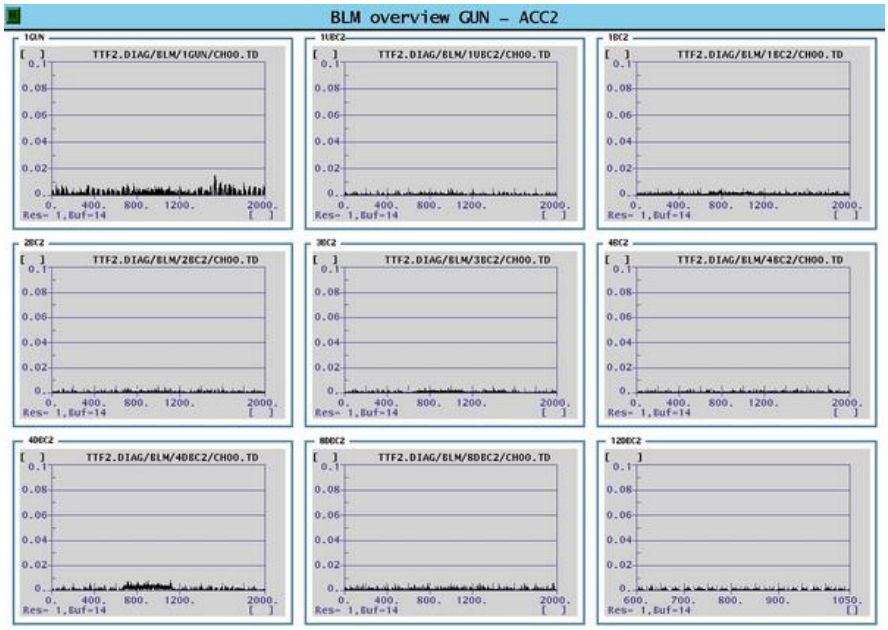
```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110206T205839.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110206T205839.sr
from computer: flashbkr3.desy.de
```

06.02.2011 20:59 ttflinac **ttflinac@:All_BCM**



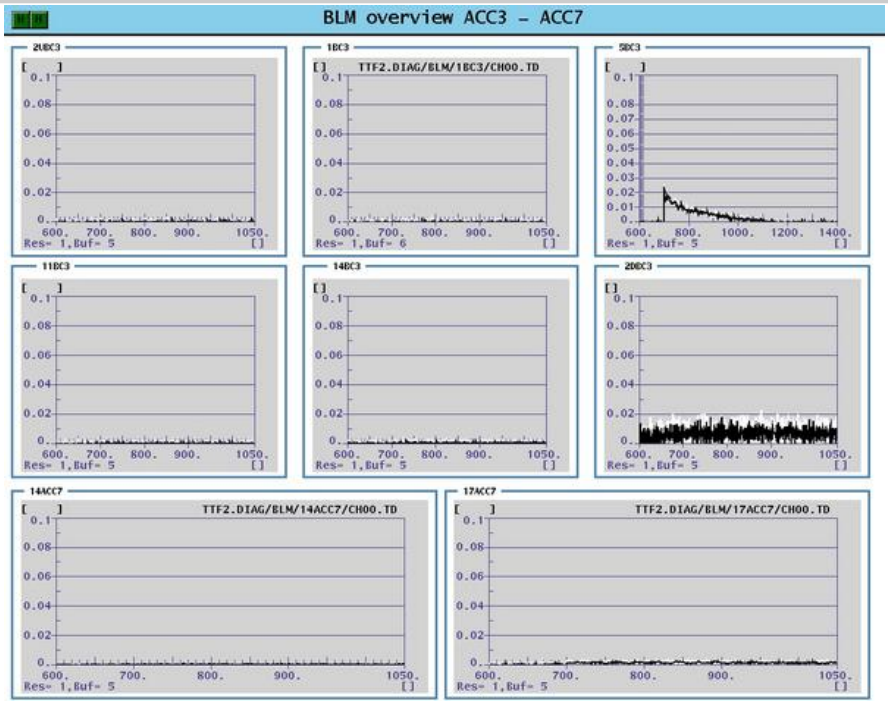
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:59:28-00.JPG

06.02.2011 20:59 ttflinac **ttflinac@:blm_overview_from_GUN_to_ACC2**



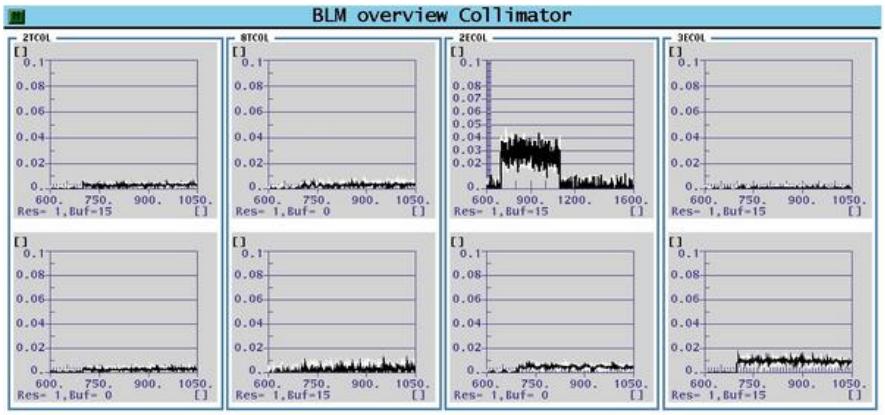
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:59:36-00.JPG

06.02.2011 20:59 ttflinac **ttflinac@:BLM_ACC3_ACC7**



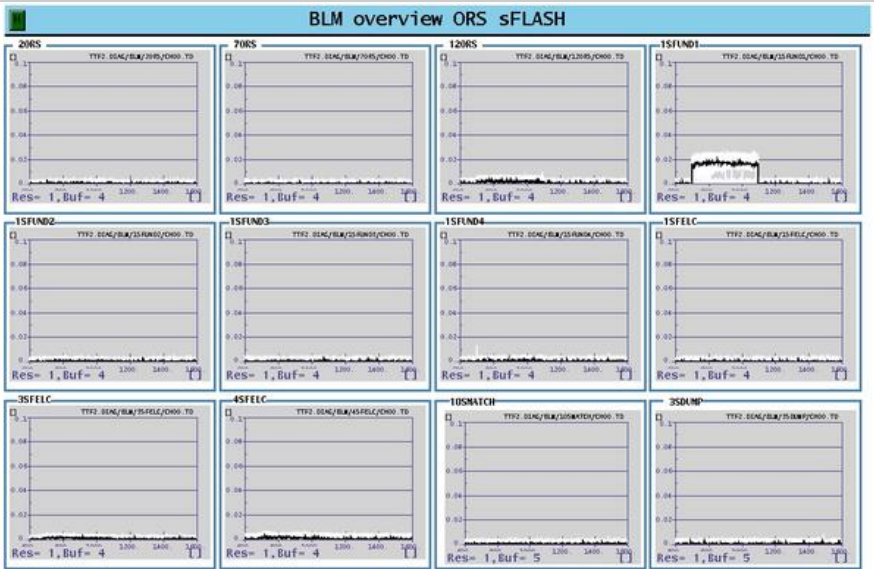
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:59:46-00.JPG

06.02.2011 20:59 ttflinac **ttflinac@:blm_overview_COL**



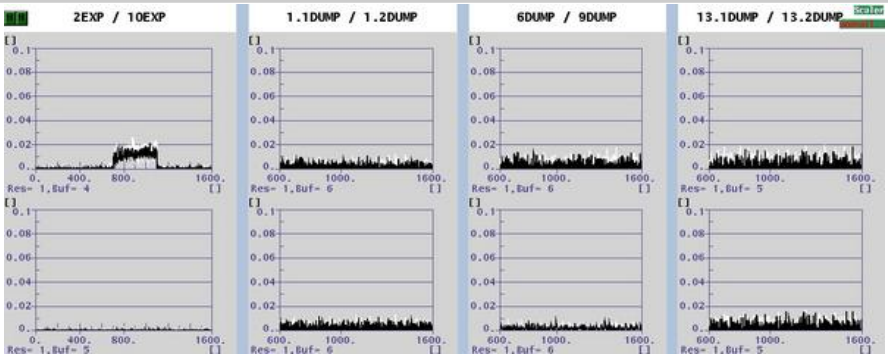
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T20:59:59-00.JPG

06.02.2011 21:00 ttflinac **ttflinac@:blm_overview_ORS**



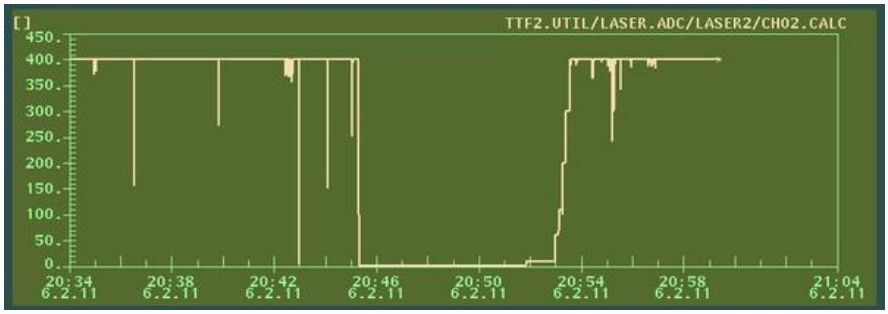
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T21:00:09-00.JPG

06.02.2011 21:00 Klose **End Docu Machine Status for Energy Distribution in ACC45 (345MV) and ACC67 (183.5MV)**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T21:00:18-00.JPG

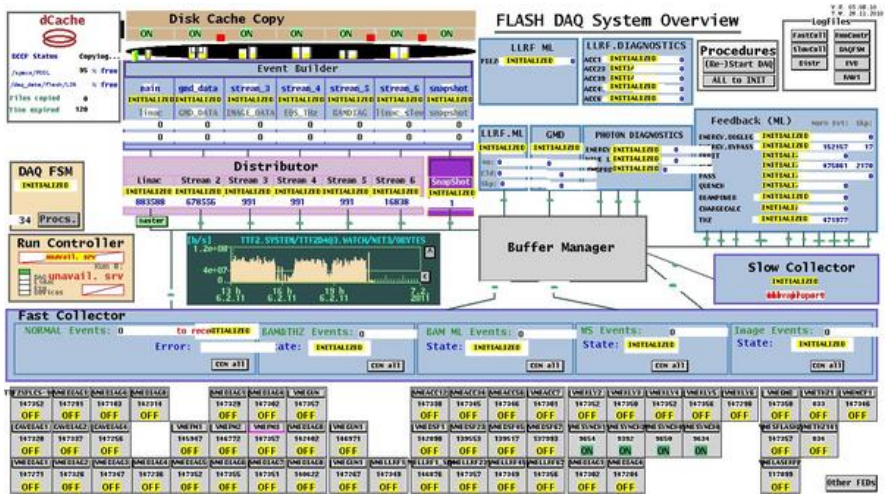
06.02.2011 21:00 ttflinac **ttflinac@:Plot_hist**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T21:00:32-00.JPG

06.02.2011 21:18 K. Klose, W. Cichalewski **DAQ is not working since 20:50:48 reboot**

This elogbook entry was sent to following experts:
Rybnikov Wilksen



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T21:18:29-00.JPG

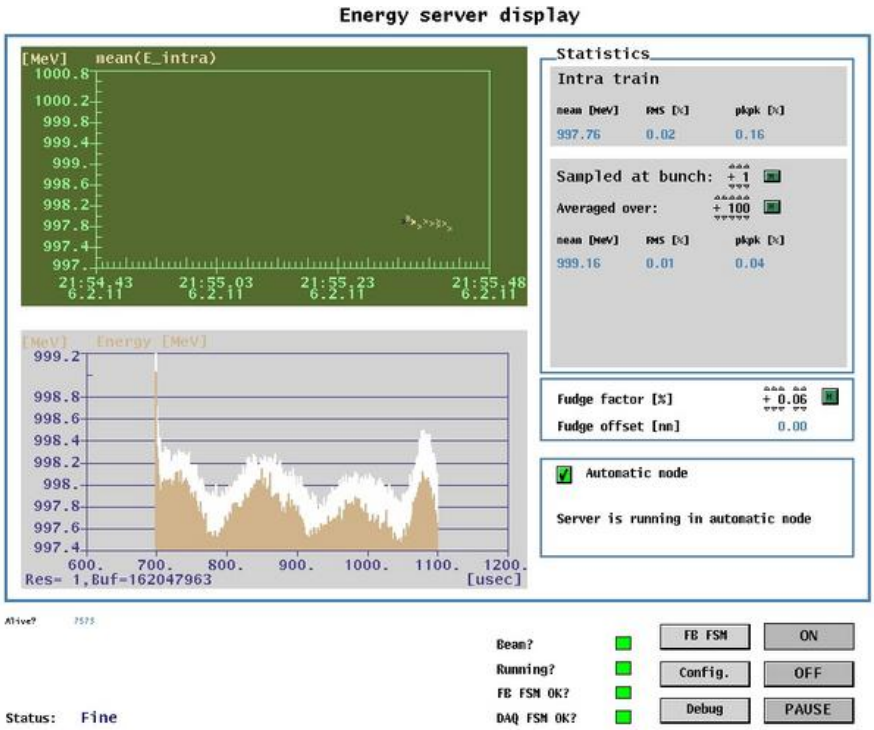
06.02.2011 21:51 Tim Wilksen **ttf2daq3 DAQ Computer Reboot**

Since this morning around 9 am with the FLASH DAQ persisted even after this afternoon's restart of the DAQ, we decided to reboot the machine ttf2daq3 just before 9 pm. The issue was that the writer processes responsible for writing the data to disk were running out of memory and being killed by the system for no apparent reason.

The reboot of ttf2daq3 took some time (big machine) and required adjusting some settings. As of now the DAQ runs again and the above mentioned problem seems to be resolved. The writer processes seem to be happy now.

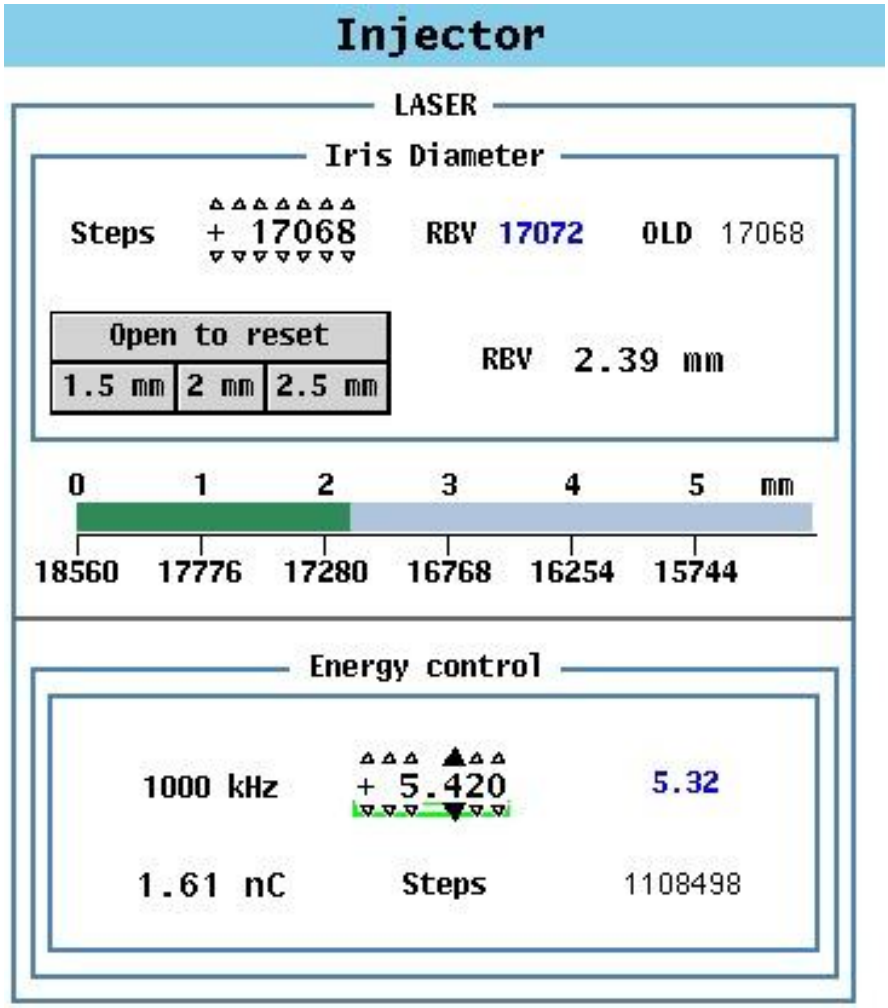
Tim Wilksen, Vladimir Rybnikov, Thomas Bruns

06.02.2011 21:55 ttflinac **ttflinac@:Energyfbm_display**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T21:55:56-00.JPG

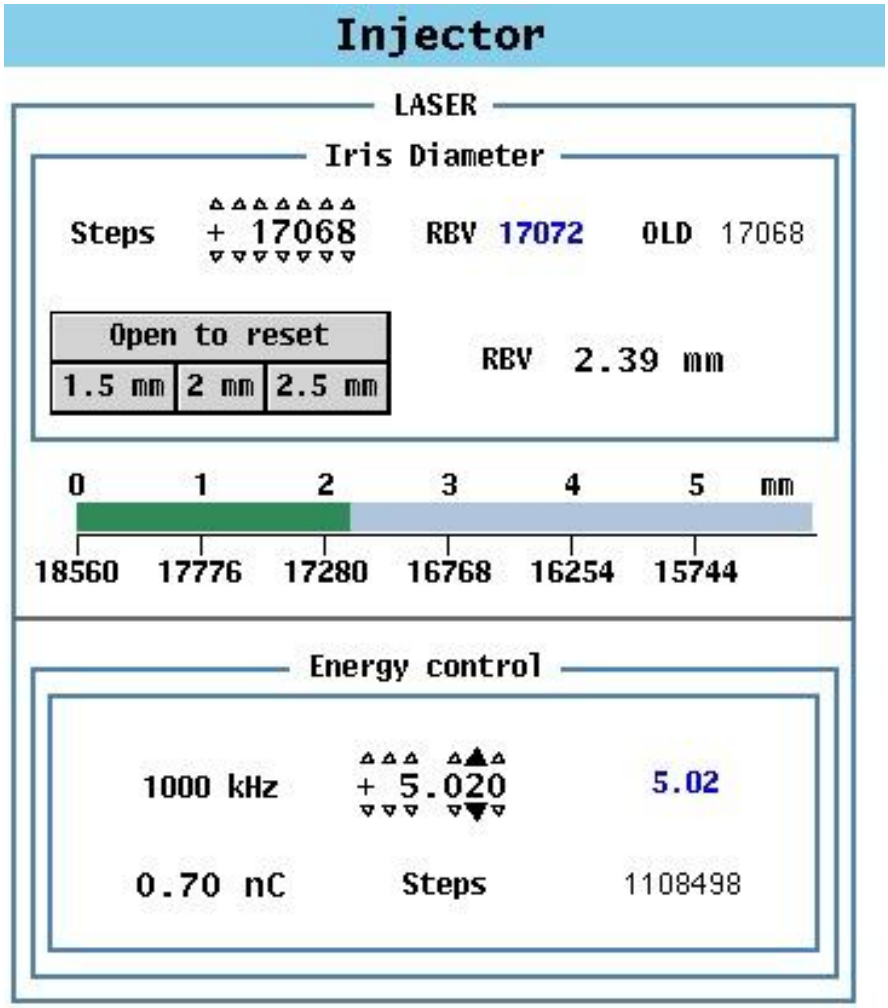
06.02.2011	22:01	klose	**Laser Attenuator Settings (Energy Control) for 1.6nC**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T22:01:52-00.JPG

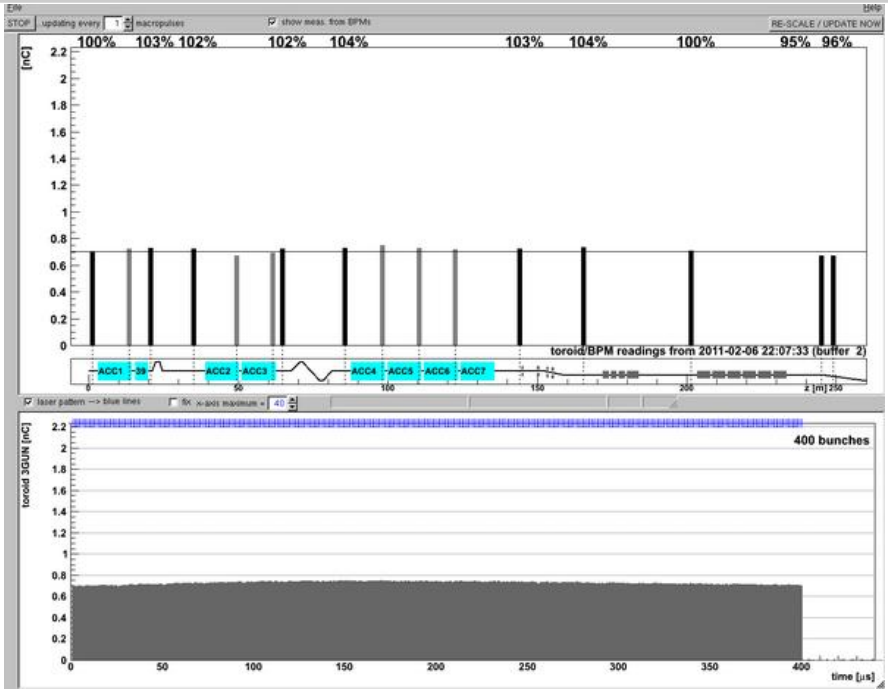
06.02.2011 22:07 Klose **Laser Attenuator Settings (Energy Control) for 0.7nC**

Decreasing the charge from 1.6nC to 0.7nC is possible only by changing the attenuator.



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T22:07:52-00.JPG

06.02.2011	22:07	Klose	**Charge reduced to 0.7nC (see plots below)**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/06.02_a/2011-02-06T22:07:58-00.ps