

ECALs monitoring in the DCS

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Indirect monitoring in the DCS of the HV system of

- ECal1 (laser system): 1500 blocks
- ECal2 (LEDs): 3068 blocks

with alert handling and archiving

→ 2x the number of HV channels monitored in the DCS up to 2008 → Tests with real data needed

tbname <small>tbname from the mapping file</small>	xpos x <small>coordinate from the mapping file</small>	ypos y <small>coordinate from the mapping file</small>	runnr <small>corresponding run number</small>	spillnr	av_amplitude <small>average LED amplitude in one run</small>	nr_events <small>Number of events used for amplitude average</small>
EC02P1__	0	0	74071	2	662.918	328
EC02P1__	0	1	74071	2	803.863	328
EC02P1__	0	2	74071	2	974.159	328
EC02P1__	0	3	74071	2	1213.51	328
EC02P1__	0	4	74071	2	1050.97	329
EC02P1__	0	5	74071	2	2108.88	328
EC02P1__	0	6	74071	2	816.268	328
EC02P1__	0	7	74071	2	888.860	328

MySQL “runlb” database, table “ECAL_MON”
(filled by the online filter, see R. Konopka’s talk)

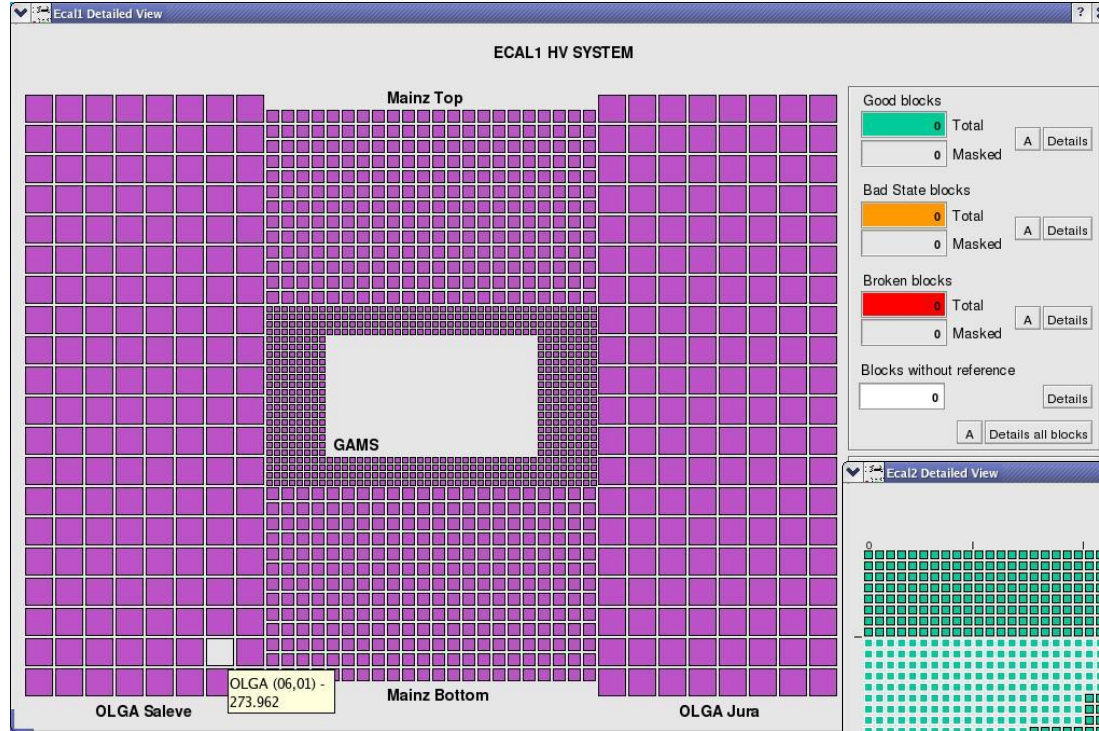
Readings:

- Every **15 minutes** a query to the database compares, for each block:
 - Amplitude of last spill recorded
 - Amplitude of previous reading in the DCS

If the difference is **>0**, the new value is sent to the DCS.

- **Every hour**, all blocks’ amplitudes are read and sent to the DCS.

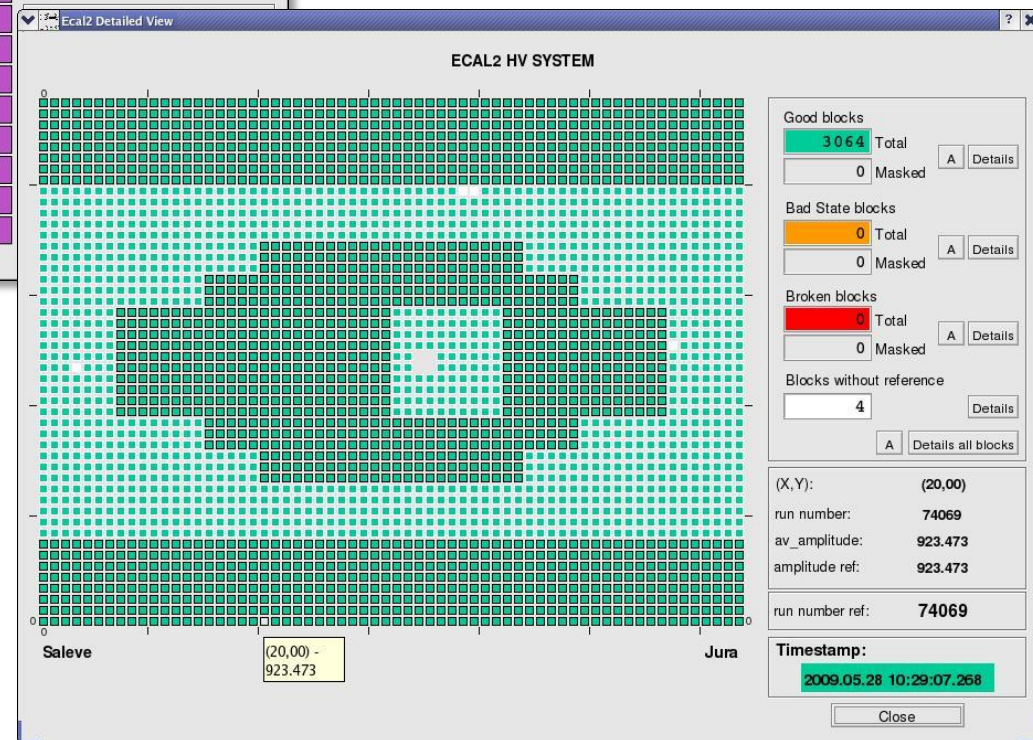
Main panels



For each reading, a **comparison** is made w.r.t. a **reference value** (defined by experts).

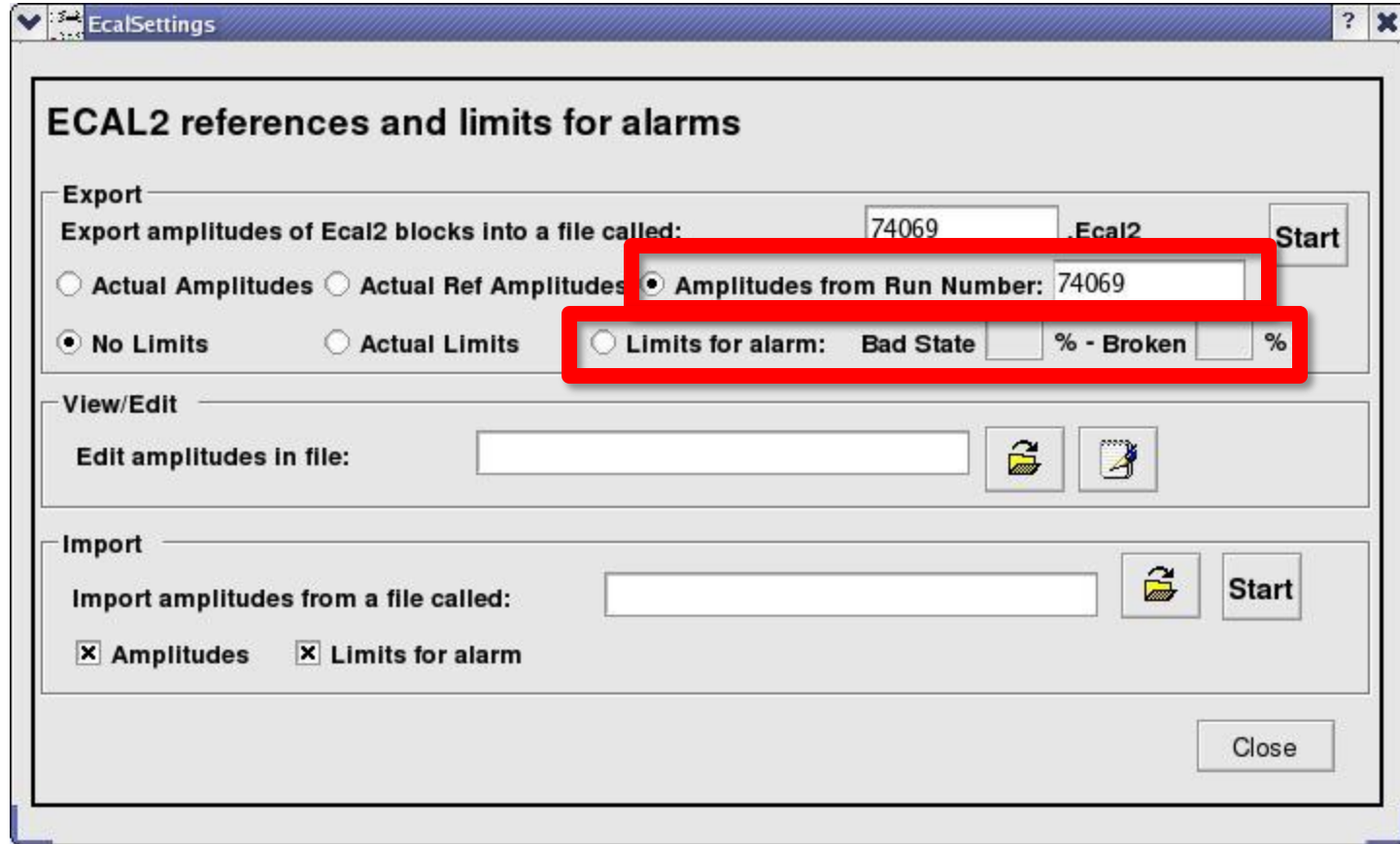
Color code:

- Good:** difference < 5%
- Bad state:** 5% < difference < 20%
- Broken:** difference > 20%
- Blocks without reference**
- Obsolete:** timestamp older than 1h



Setting of reference values

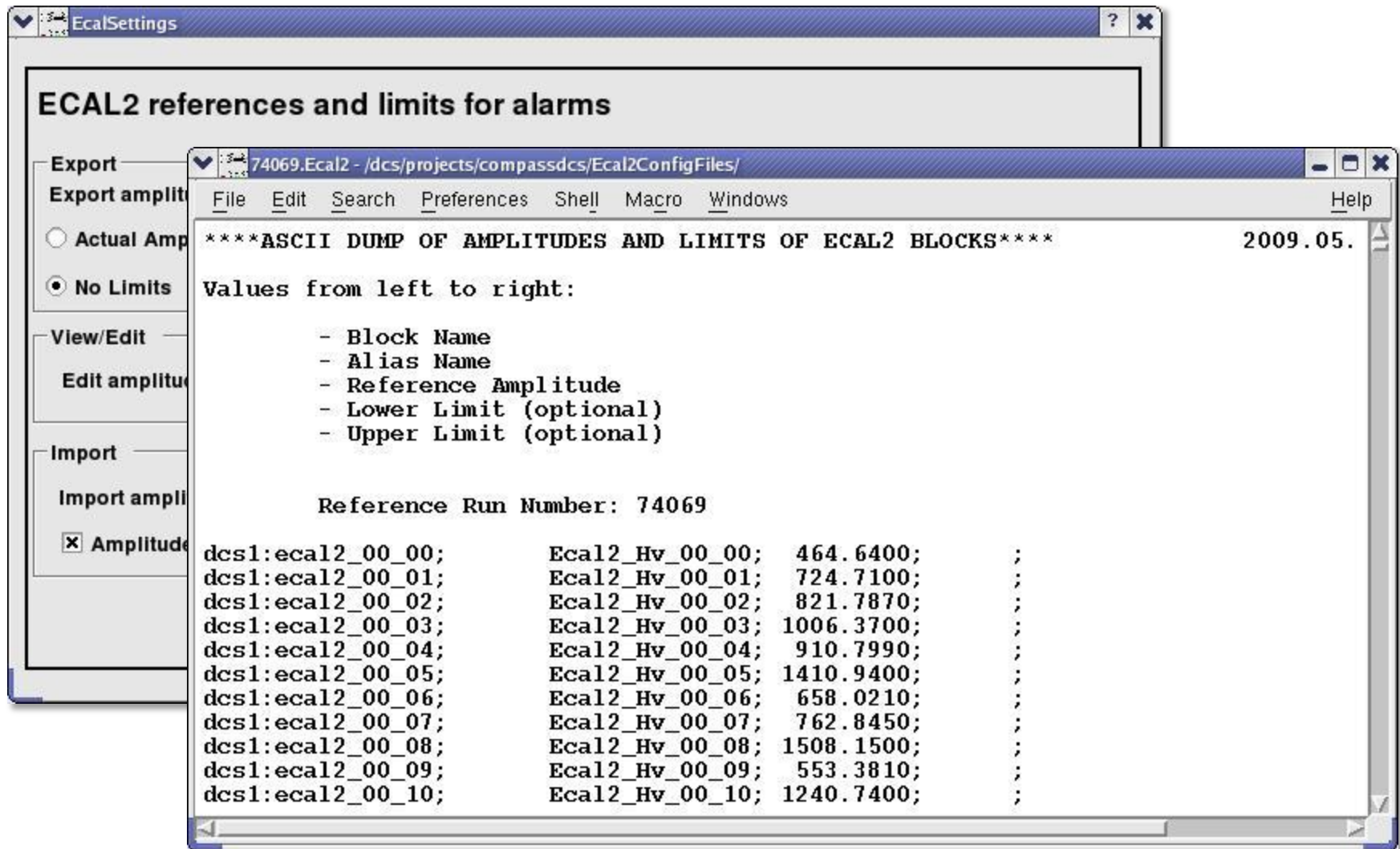
Detector experts can set the **reference values** from a dedicated panel:



The screenshot shows the 'EcalSettings' dialog box with the title 'ECAL2 references and limits for alarms'. It is divided into three main sections: 'Export', 'View/Edit', and 'Import'. In the 'Export' section, there is a text field for 'Export amplitudes of Ecal2 blocks into a file called:' with the value '74069'. To its right is a button labeled 'Start'. Below this, there are three radio buttons: 'Actual Amplitudes', 'Actual Ref Amplitudes', and 'Amplitudes from Run Number: 74069'. The 'Amplitudes from Run Number' option is selected. Below these, there are three radio buttons: 'No Limits', 'Actual Limits', and 'Limits for alarm: Bad State % - Broken %'. The 'Limits for alarm' option is selected. In the 'View/Edit' section, there is a text field for 'Edit amplitudes in file:' and two icons. In the 'Import' section, there is a text field for 'Import amplitudes from a file called:', a button with a refresh icon, and a button labeled 'Start'. At the bottom right of the dialog is a button labeled 'Close'.

Also the **limits for alarm** can be viewed or changed from this panel.

Setting of reference values (2)



The screenshot shows two overlapping windows. The background window is titled 'EcalSettings' and contains a sidebar with options: 'Export' (with 'Actual Amplitude' and 'No Limits' radio buttons), 'View/Edit' (with 'Edit amplitude' button), and 'Import' (with 'Import amplitude' button and a checked 'Amplitude' checkbox). The foreground window is titled '74069.Ecal2 - /dcs/projects/compassdcs/Ecal2ConfigFiles/' and displays an ASCII dump of ECAL2 block amplitudes and limits. The dump includes a header, a list of values from left to right, a reference run number, and a table of 11 ECAL2 blocks with their respective amplitudes and limits.

ECAL2 references and limits for alarms

Export
Export amplitude
☐ Actual Amplitude
☒ No Limits
View/Edit
Edit amplitude
Import
Import amplitude
☒ Amplitude

74069.Ecal2 - /dcs/projects/compassdcs/Ecal2ConfigFiles/

File Edit Search Preferences Shell Macro Windows Help

****ASCII DUMP OF AMPLITUDES AND LIMITS OF ECAL2 BLOCKS**** 2009.05.

Values from left to right:

- Block Name
- Alias Name
- Reference Amplitude
- Lower Limit (optional)
- Upper Limit (optional)

Reference Run Number: 74069

dcs1:ecal2_00_00;	Ecal2_Hv_00_00;	464.6400;	
dcs1:ecal2_00_01;	Ecal2_Hv_00_01;	724.7100;	
dcs1:ecal2_00_02;	Ecal2_Hv_00_02;	821.7870;	
dcs1:ecal2_00_03;	Ecal2_Hv_00_03;	1006.3700;	
dcs1:ecal2_00_04;	Ecal2_Hv_00_04;	910.7990;	
dcs1:ecal2_00_05;	Ecal2_Hv_00_05;	1410.9400;	
dcs1:ecal2_00_06;	Ecal2_Hv_00_06;	658.0210;	
dcs1:ecal2_00_07;	Ecal2_Hv_00_07;	762.8450;	
dcs1:ecal2_00_08;	Ecal2_Hv_00_08;	1508.1500;	
dcs1:ecal2_00_09;	Ecal2_Hv_00_09;	553.3810;	
dcs1:ecal2_00_10;	Ecal2_Hv_00_10;	1240.7400;	

Detailed lists

Good blocks
3064 Total
0 Masked
A Details

Bad State blocks
0 Total
0 Masked
A Details

Broken blocks
0 Total
0 Masked
A Details

Blocks without reference
4
Details

Details all blocks

List Panel

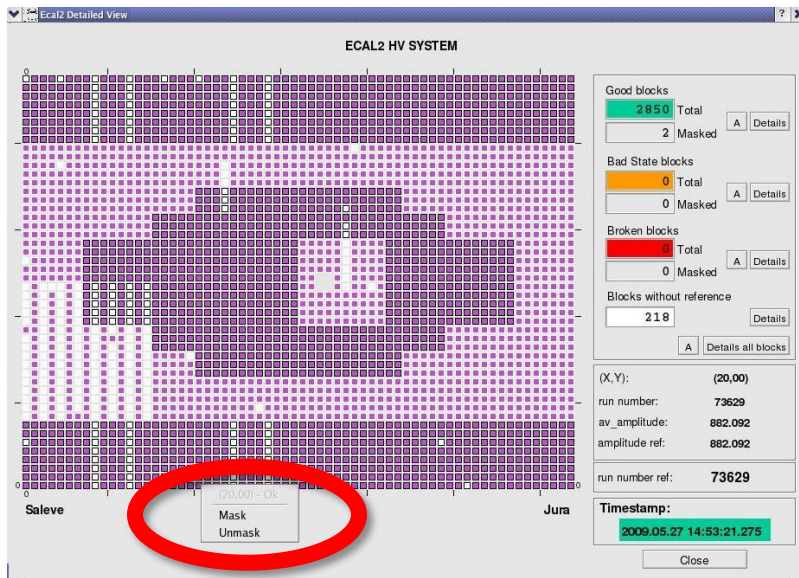
Detector name: Ecal2

Blocks	Amplitude	Run number	Amplitude ref	Status	
ecal2 00 00	94.7632	73629	94.7632	Good	Not Masked
ecal2 00 01	109.132	73629	109.132	Good	Not Masked
ecal2 00 02	208.895	73629	208.895	Good	Not Masked
ecal2 00 03	92.1974	73629	92.1974	Good	Not Masked
ecal2 00 04	265.645	73629	265.645	Good	Not Masked
ecal2 00 05	590.808	70959	-1	N.A.	N.A.
ecal2 00 06	164.053	73629	164.053	Good	Not Masked
ecal2 00 07	31.9079	73629	31.9079	Good	Not Masked
ecal2 00 08	1805.96	70959	-1	N.A.	N.A.
ecal2 00 09	732.615	70959	-1	N.A.	N.A.
ecal2 00 10	1063	70959	-1	N.A.	N.A.
ecal2 00 11	716.692	70959	-1	N.A.	N.A.
ecal2 00 12	1191.04	70959	-1	N.A.	N.A.
ecal2 00 13	1655.92	70959	-1	N.A.	N.A.
ecal2 00 14	1028.92	70959	-1	N.A.	N.A.
ecal2 00 15	1018.81	70959	-1	N.A.	N.A.
ecal2 00 16	1448.12	70959	-1	N.A.	N.A.
ecal2 00 17	721.308	70959	-1	N.A.	N.A.
ecal2 00 18	2016.99	73629	2016.99	Good	Not Masked
ecal2 00 19	1382.73	70959	-1	N.A.	N.A.
ecal2 00 20	489.077	70959	-1	N.A.	N.A.
ecal2 00 21	1170	70959	-1	N.A.	N.A.
ecal2 00 22	690.385	70959	-1	N.A.	N.A.
ecal2 00 23	496.885	70959	-1	N.A.	N.A.
ecal2 00 24	59.8158	73629	59.8158	Good	Not Masked
ecal2 00 25	249.763	73629	249.763	Good	Not Masked
ecal2 00 26	3400.23	70959	-1	N.A.	N.A.
ecal2 00 27	131.197	73629	131.197	Good	Not Masked
ecal2 00 28	116.579	73629	116.579	Good	Not Masked
ecal2 00 29	113.237	73629	113.237	Good	Not Masked

Reference Run Number: 73629

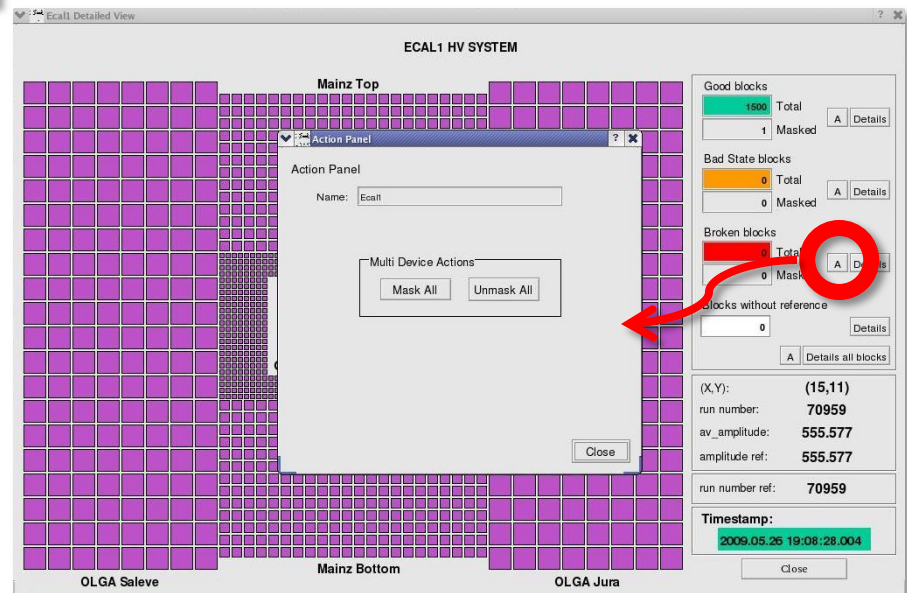
Close

Masking alarms

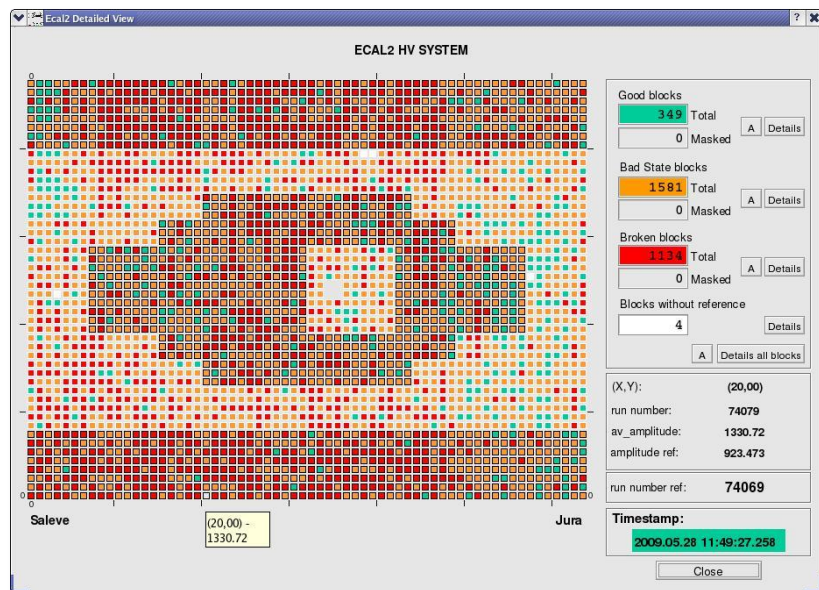


Alarms can be masked, either individually, with a right click on top of the block...

...or by groups.

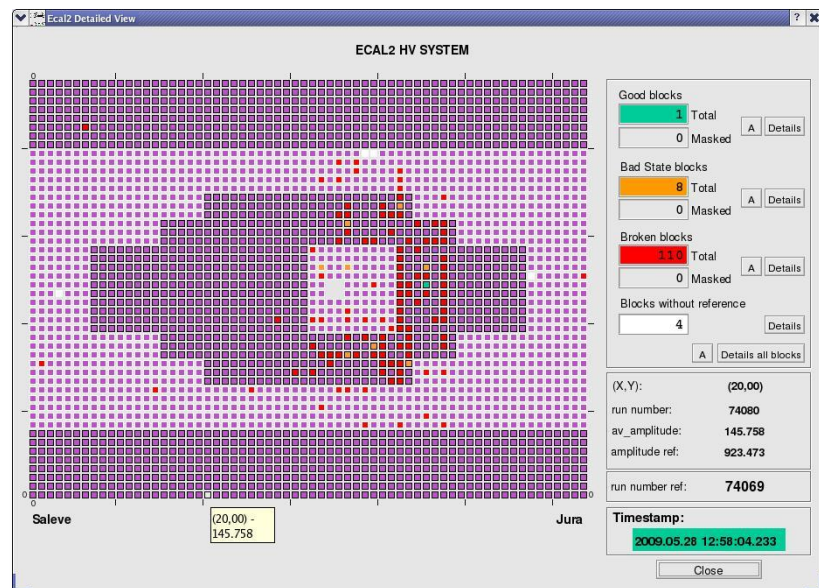


Examples

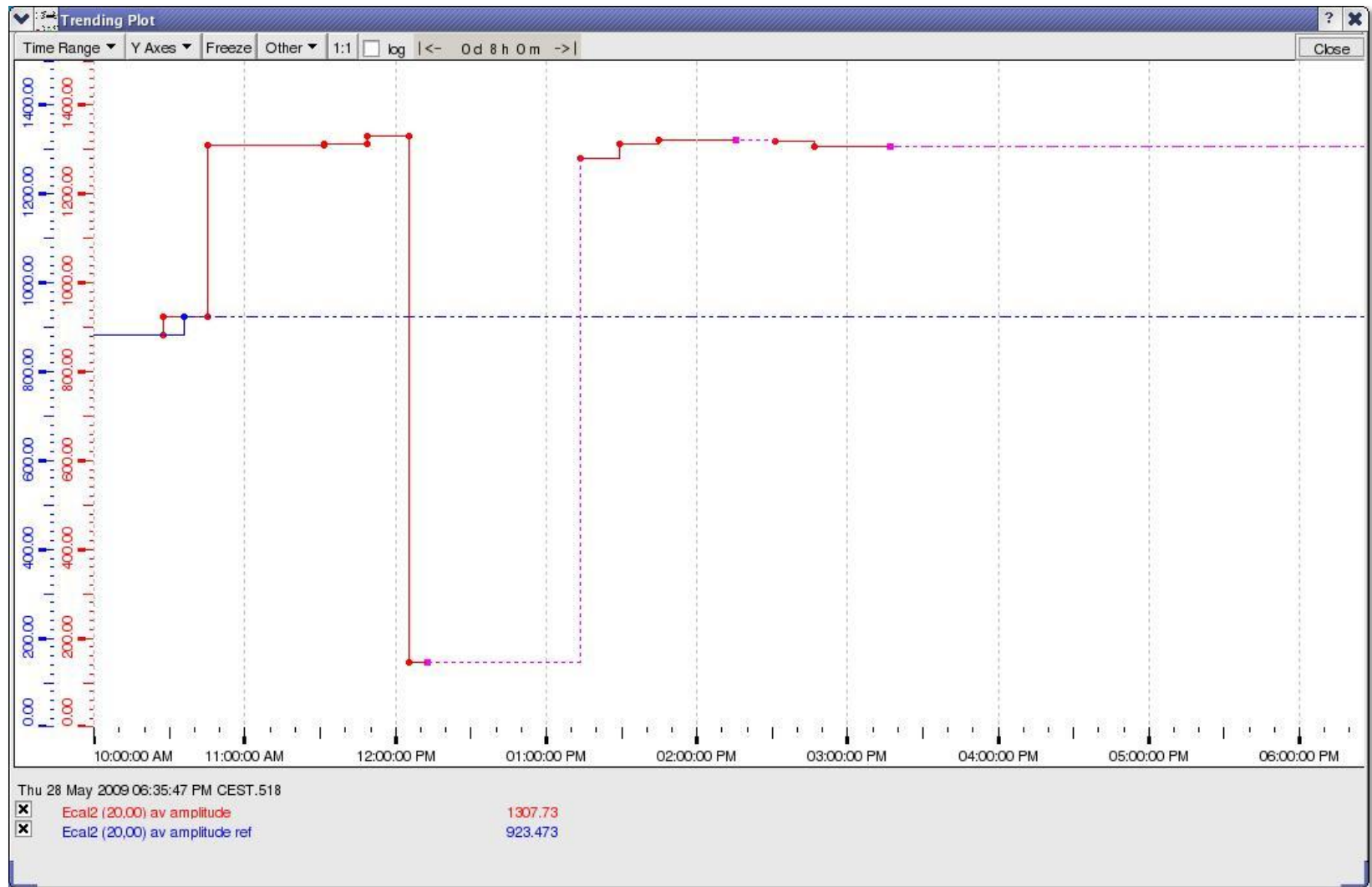


HV switched on, unstable conditions (work ongoing), unsuitable reference

HV switched off (no new values in the DB for most blocks)



The trending plots of amplitudes and references can be accessed by double clicking blocks:



- The monitoring wasn't tested in stable conditions yet.
- The new event builders, needed to run the online filter with ECals monitoring, are not yet at CERN.
- Work is still ongoing for the ECal1 monitoring at the level of the online filter.
- Robert Konopka is leaving CERN at the end of May. A new responsible for the online filter should be found soon!



Thank you!
