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# General Info

AMS landed in KSC on Thursday August 26th and powered on the first time on Saturday 28th. This page is dedicated to the monitoring of tracker information during period @ KSC, more general infos are as usual in the AMS-02 ELOG. **The date and time used are now the KSC local time, ie GMT - 4 hours.**

date	first run number	last run number	notes
02 Dec 2010	1291320363	1291324265	Trigger Configuration back to normal, New High Threshold Settings Test and Masking of TDR-1-21
02 Dec 2010	1291313414	1291318890	New High Threshold Settings Test and Trigger Configuration set to Any1
01 Dec 2010	1291242252	1291247728	New High Threshold Settings Test to test Tracker Event Size Decrease (see text)
04 Sep 2010	1283610658		dynamy ped ON, 0101, BB config
03 Sep 2010			dynami pedestal OFF (by mystake)
02 Sep 2010			dynamic pedestal ON, parameter set to 0401, TOF studies
01 Sep 2010			dynamic pedestal ON, parameter set to 0401, TOF studies
31 Aug 2010	1283268039	1283297156	dynamic pedestal ON, parameter set to 0101
30 Aug 2010	1283184035	1283208031	dynamic pedestal ON, parameter set to 0101

## 9 March 2011

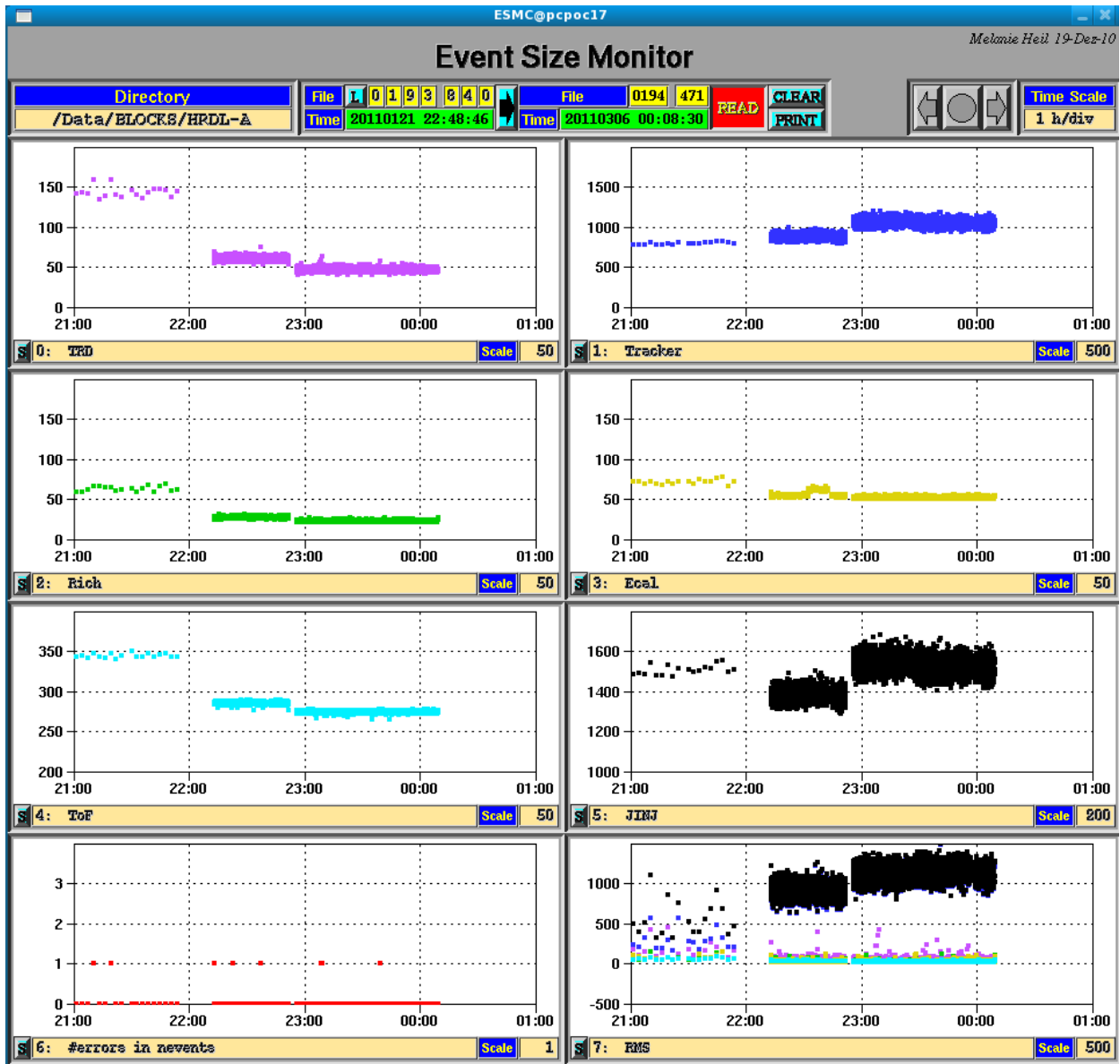
18.20 UTC: Changed temporarily the TDR parameter 0x13 (output to the get calibration command) from DF to 2EF. the probably it will be changed permanently to 2CF.

## 5 March 2011

We Trigger Test changing TOF configuration as well as TOF threshold settings (paralelly Ecal was also playing with there settings. Second Step calibration and dynamic pedestals activated for the tests and latest release of DSP code both on JINFs and TDRs (3ae3) On the plot, from left to right, you observe the event size behavior for the following cases:

1. Tests for very low rate with a pre-scale of 100 on JLVI. Rate ~4/5 Hz Lower density of points is explained by the fact a point is plotted every 1000 events.

2. TOF 1/4 and nominal TOF threshold values (also loose conditions 1/3 for ECAL). Rate was ~670Hz.
3. TOF 1/4 and lower threshold values both for TOF and ECAL. Rate was ~1kHz



19 Dicembre 2010 00 - 08:00 (EST)

Runs with trigger 2\_OUT\_4 in good nominal conditions marked with TAG: 000D.

At 5:44 (EST) try a run with trigger ANY1 marked with TAG: DDDD

17 December 2010

*Testing event size*

*Threshold setted by plane (3.625 - 3.500 for external planes, 4.000 - 3.875 for internal planes)*

*DDT = No*

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*DT = 170 us, trigger (3/4) = 80 Hz, live-time = 99% (as expected), event size = 800 byte, RMS = 400 byte*

*DT = 170 us, trigger (1/4) = 600 Hz, live-time = 90% (as expected), event size = 1100 byte, RMS = 1000 byte!*

***DDT = 130 us, tagged strips(p, n) = (4963, 3629) , CalDB \_1292611911.root***

*DT = 170 us, trigger (1/4) = 600 Hz, live-time = 90% (as expected), event size = 1000 byte, RMS = 900 byte*

*DT = 130 us, trigger (1/4) = 600 Hz, live-time = 91% (as expected), event size = 1300 byte, RMS = 1500 byte <<< LIVETIME IS GOOD!*

***DDT = 130 us + 170 us, tagged strips(p, n) = (5357, 4518), CalDB \_1292.root***

*DT = 130 us, trigger (1/4) = 600 Hz, live-time = 91% (as expected), event size = 900 byte!!!, RMS = 1000 byte*

*DT = 130 us, trigger (1/4 LT) = 1000 Hz, live-time = 87% (as expected), event size = 1100 byte, RMS = 1300 byte*

***DDT = No***

*DT = 130 us, trigger (1/4 LT) = 1000 Hz, live-time = 84% event size = 2000 byte, RMS = 3000 byte*

***DDT = 160 + 180 us***

***DT = 150 us, trigger (1/4) = 1000 Hz, event size = 900 byte, RMS = 500 byte***

### ***Second Step DeltaT Scan (18 of December UTC):***

- 06.30 (UTC) - Setting the thresholds layer by layer (3.625 - 3.500 for external layers, 4.000 - 3.875 for internal layers) - Dead Time in SDR's 130musec
- 06:33 CalDB\_1292653941.root - After Second Step @ 130musec
- 07:16 CalDB\_1292656403.root - After Second Step @ 140musec
- 07:51 CalDB\_1292658502.root - After Second Step @ 150musec
- 08:27 CalDB\_1292660503.root - After Second Step @ 160musec
- 09:32 CalDB\_1292664638.root - After Second Step @ 170musec
- 10:14 CalDB\_1292666835.root - After Second Step @ 180musec
- 10:53 CalDB\_1292668777.root - After Second Step @ 190musec
- ~11:15 CalDB\_1292670893.root - After Second Step @ 200musec
- ~11:30 CalDB\_1292671859.root - After Second Step @ 210musec
- ~11:45 CalDB\_1292672520.root - After Second Step @ 220musec
- ~11:55 CalDB\_1292673147.root - After Second Step @ 230musec
- ~12:05 CalDB\_1292673837.root - After Second Step @ 500 musec

***Starting a 'normal' data taking (18 of December UTC), thresholds layer by***

**layer (3.625 - 3.500 for external layers, 4.000 - 3.875 for internal layers), Dead Time in SDR's 130musec, after Second Step @ 130,160 and 180 musec**

- ~12:15 CalDB\_.root NON FATTO CHE SI ERA PIANTATO TUTTO
- 

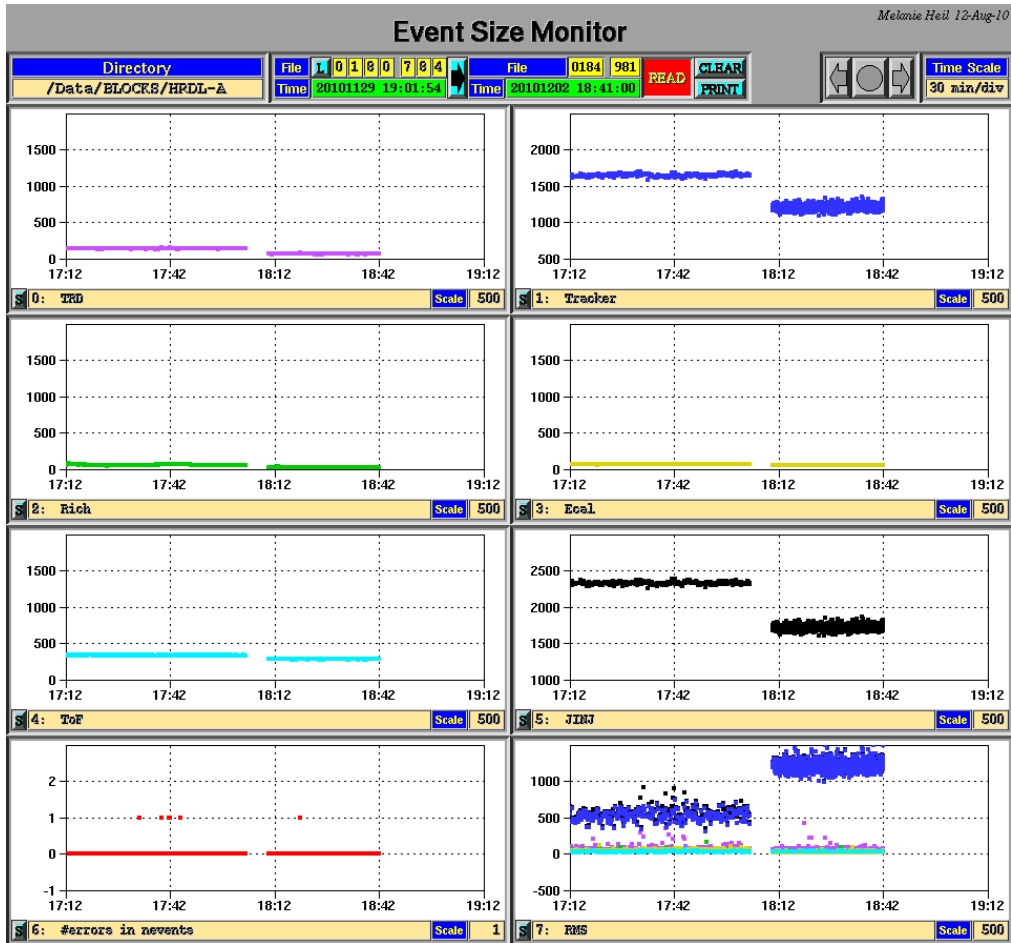
## 2 December 2010

We have setted the same highthreshold values as on the 2nd of december (see below). Trigger configuration was set to Any1.

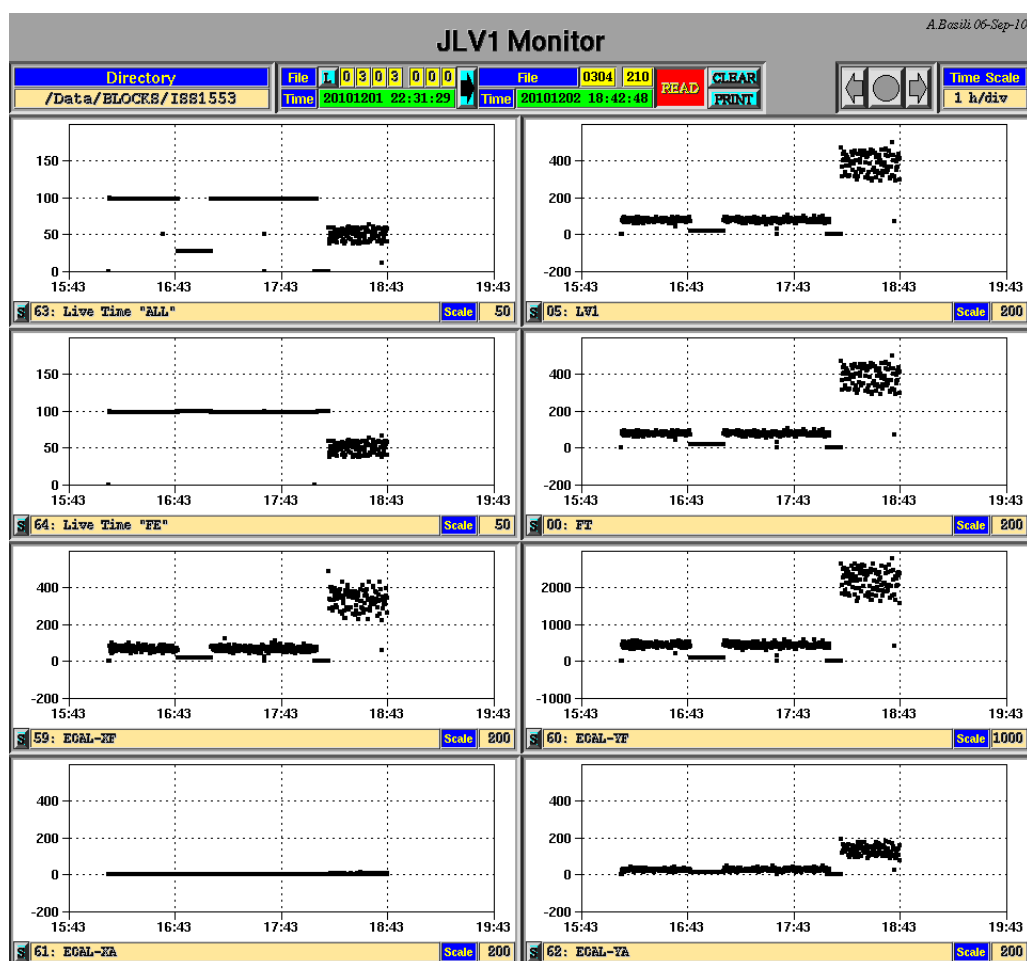
Tests:

1. **18:00(UTC)** New Threshold Settings for TDRs and Trigger set to Any1, first Run ID is 4CF7E106 (First Calibration is CalDB\_1291313411.root).  
Trigger Rate: ~400Hz, Live Time: ~50% !!!, Artificial Dead Time: 170us
2. **20:04(UTC)** Back to standard Trigger Configuration and masking VA of TDR-1-21. First Run ID is 4CF7FC2B (First Calibration is CalDB\_1291320359.root)  
(Trigger Rate: ~80Hz, Live Time: ~99%)  
Note there was a Tas Run made in between.
3. **21:22 (UTC)**: Highthreshold values set back to 3.5 and TDR1-21 VAs unmasked. First RunID: 4CF80DE9 (First Calibration is CalDB\_1291324901.root).

*Tracker Event Size (test 1):*



JLVI Info. (test 1):



## 1 December 2010

We have setted higher threshold values for a cupple of runs to test Event Size decrease for Tracker.

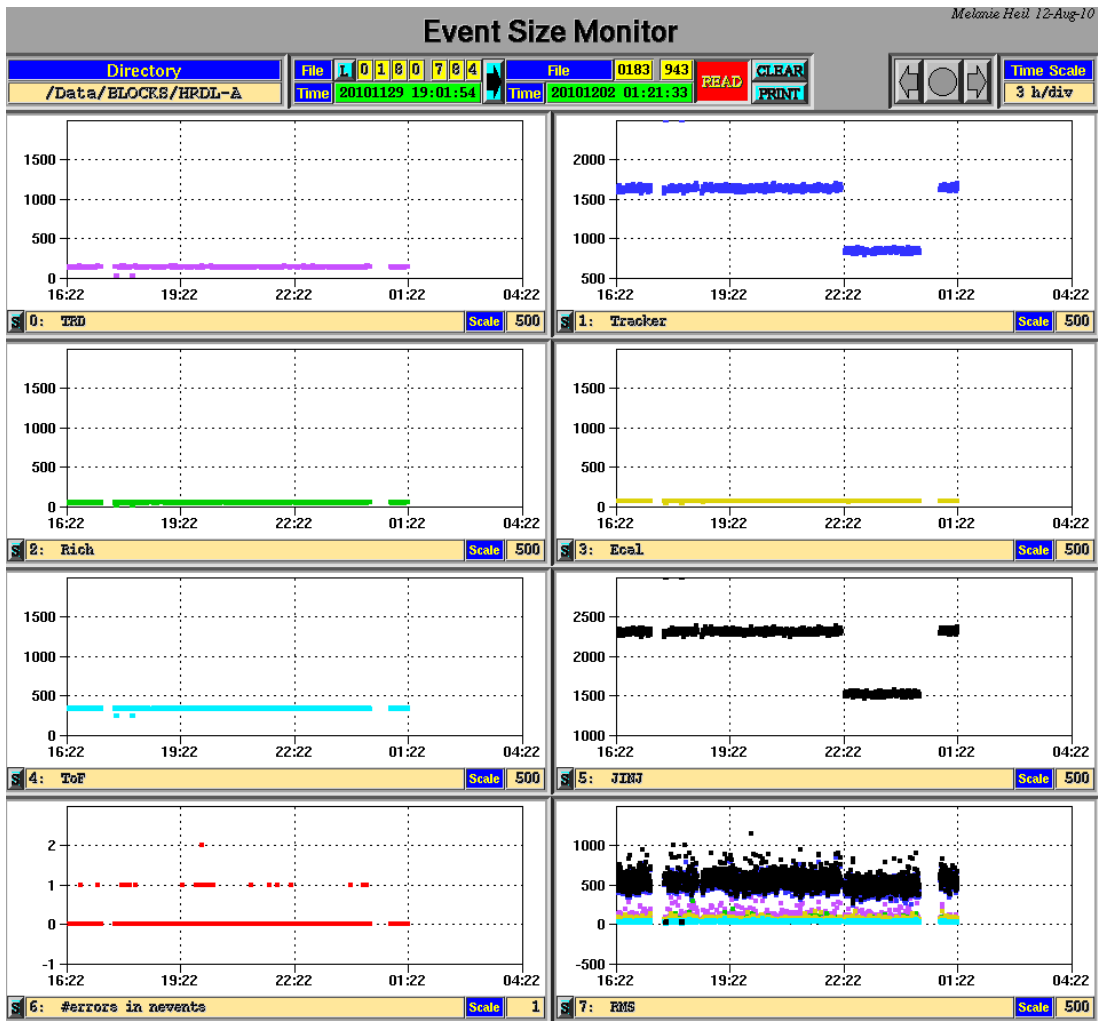
Current High Threshold Settings:  $(S1, S2, K) = (3.5, 3.5, 3.5)$  for all layers  
**New Settings:**

1. For external layers (Layer 1, Layer 8 and Layer 9):  $(S1, S2, K)$  set to  $(3.625, 3.625, 3.5)$
2. For internal layers :  $(S1, S2, K)$  set to  $(4, 4, 3.875)$

Test:

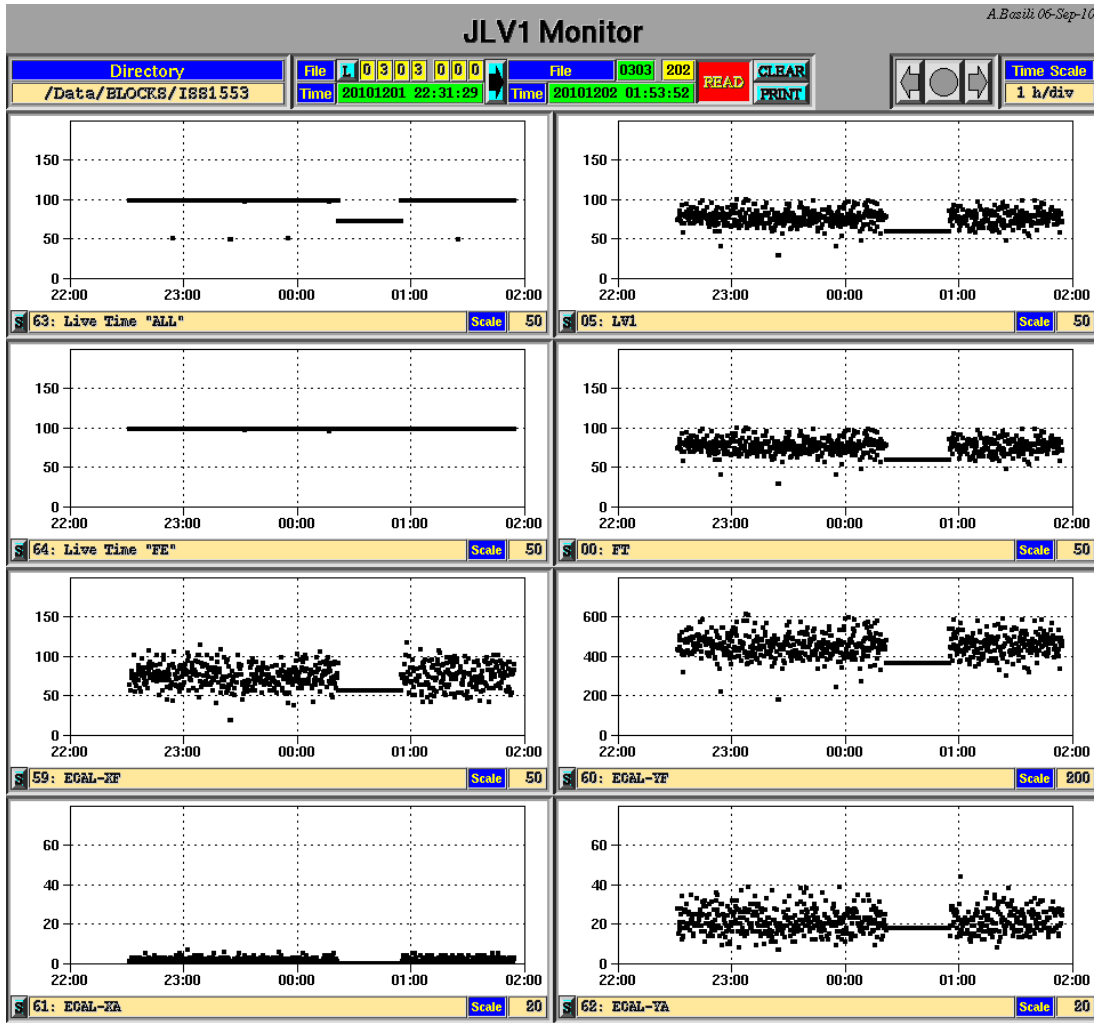
- **22:23** (UTC) New Threshold Settings for TDRs, first Run ID is 4CF6CB0C (First Calibration is CalDB\_1291242248.root)
- **00:56** (UTC) Threshold settings back to previous values (First Calibration is CalDB\_1291251297.root).

*Event Size for Test Thresholds:*

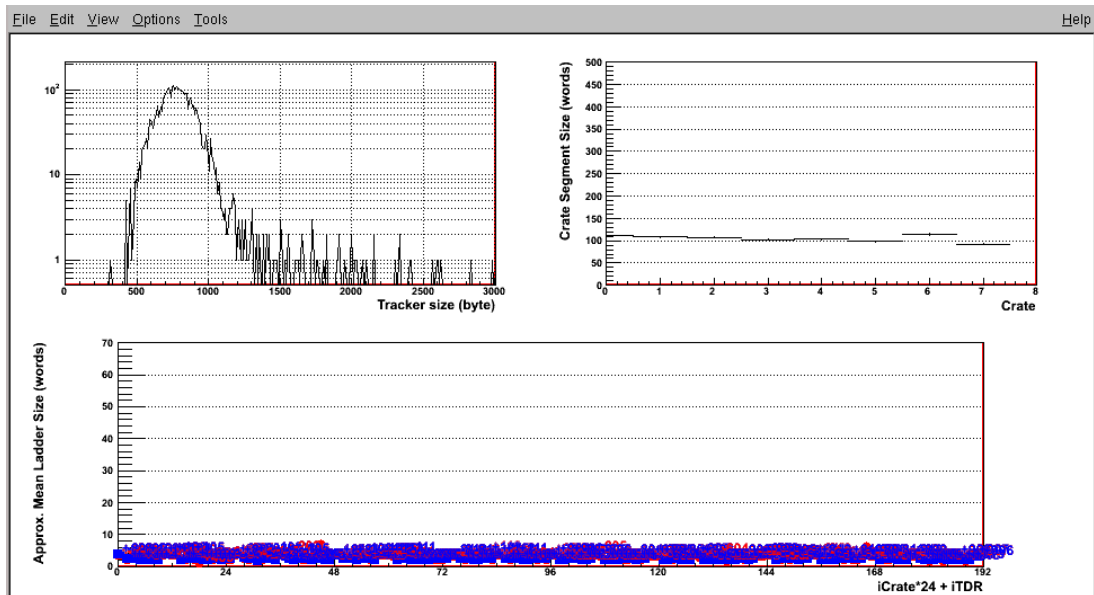


*Live Time during threshold test:*





*Size Summary fro Data:*



**4 October 2010**

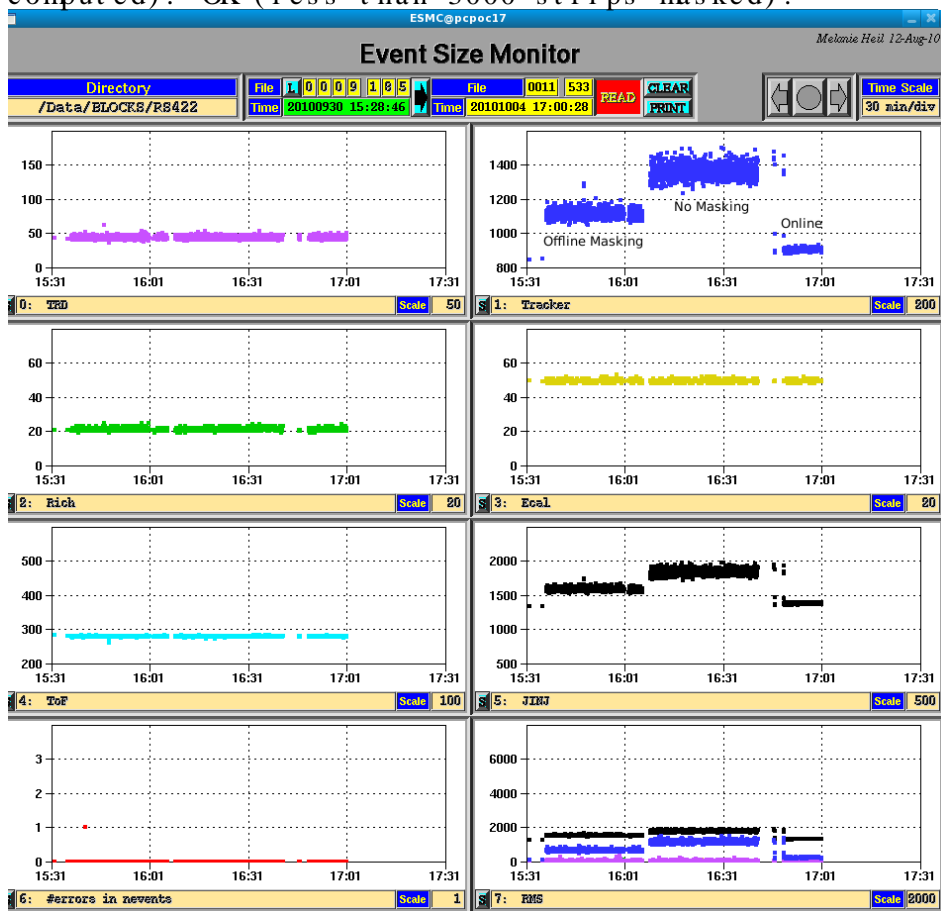
- 15:00 Test Occupancy with Threshold 0x9 with a very low rate: check if occupancy is dependent from rate! YES IT IS!

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Trigger rate ~ 500 Hz, thr 0x9, nevents 0x1000, tagged strips

Trigger rate ~ 10 Hz, thr 0x9, nevents 0x1000,

- 16:00 Test Occupancy with Threshold 0x9 (0.22% a number offline computed). OK (less than 3000 strips masked)!



- AMS is in horizontal position. Many tests with trigger rate and detector thresholds. Don't use these data.

### 3 October 2010

- AMS is in horizontal position. Many tests with trigger rate and detector thresholds. Don't use these data.

### 2 October 2010

- AMS is in horizontal position. Many tests with trigger rate and detector thresholds. Don't use these data.

### 28 September 2010

- From 9:00h to 16:00h: Tracker Bias at 60 V

### 25 September 2010

- h16:00: starting from now on the FLASH memory of TDRs there are: DSP code 29f3 (ex 3a73), its configuration file 6001 (dynped 401, no occupancy calculation) the old DSP code 3a33 and its configuration file 7011 (used in test beam).

- Run 1285445350 **without occupancy mask** (for occupancy studies)
- Occupancy test:
- CalDB\_1285447860.root 0x1000 0x200 (13%) 1 n 0 p
- CalDB\_1285448545.root 0x1000 0x100 (7%) 2 n 0 p
- CalDB\_1285449220.root 0x1000 0x50 (2%) 4 n 1 p
- QUESTO OCCUPANCY CALCULATOR SEMBRA NON FUNZIONARE >>> CHECK DELLE TABELLE DI OCCUPANCY!!!

#### 04 September 2010

- The power step file has been modified and now we are back to default DSP code (29F3) and config (6001). In particular dynamic peds are on with parameter 0101

#### 03 September 2010

- no dynamic pedestal.
- configuration transition from AA to BB in the afternoon

#### 02 September 2010

- 

#### 01 September 2010

- The power step file used was the same of the beamtest: DSP code file 3a33, with dynamic pedestal on with parameter 0401, loaded by hand
- data tacking conditions were unusual, to allow TOF threshold studies. In particular several runs, with different threshold, were taken without calibration. In particular this is interesting for the first hour during which event size was increasing, but not dramatically.
- data are good for dynamic ped studies. A typical statistics follows (block 0154/833):

*Selected trigger ev.: 3173*

*Data taking time: 60.1 sec*

*Approx Selected Trigger Rate: 52.8 Hz*

*Approx Reconstructed Tracks Rate: 35.4 Hz*

*Approx Track Rec. Eff. for the Sel. Trig.: 67.1 %*

*Approx Average Event Size: 1138.4 words*

*Average Number of RawCluster per Event: 71.3*

*Average Number of Cluster per Event: 19.1*

*Average Number of Hits per Event: 16.0*

*Average Number of Tracks per Event: 0.5*

*Average Number of Hits per Track: 6.2*

***NB: no significant difference in efficiency/noise in stable condition (for a fixed temperature)!***

#### 31 August 2010

- The power step file used was the same of the beamtest: DSP code file 3a33, configuration file 6001 was loaded by hand in order to activate dynamic pedestal with parameter 0101.

- stable conditions data tacking for the whole day
- data are good for muon flux

**30 August 2010**

- The power step file used was the same of the beam test: DSP code file 3a33, configuration file 6001 was loaded by hand in order to activate dynamic pedestal with parameter 0101. Probably the first couple of runs were without dynamic pedestals. Example of statistics (block ):

*Selected trigger ev.: 2814*  
*Data taking time: 53.0 sec*  
*Approx Selected Trigger Rate: 53.1 Hz*  
*Approx Reconstructed Tracks Rate: 35.4 Hz*  
*Approx Track Rec. Eff. for the Sel. Trig.: 66.6 %*  
*Approx Average Event Size: 1141.1 words*  
*Average Number of RawCluster per Event: 71.7*  
*Average Number of Cluster per Event: 19.1*  
*Average Number of Hits per Event: 15.9*  
*Average Number of Tracks per Event: 0.5*  
*Average Number of Hits per Track: 6.2*

**NB:** *from the comparison between the 28 Aug table and this one we could state that there is no increase of noise or loss of efficiency due to the dynamic pedestal algorithm!!*

- stable conditions data tacking for the whole day
- data are good for muon flux
- A desync problem appeared (block 0153/512). The error log follows. The desync appeared in the event collection of one of the two JINJ's. The one reading T0, T1, T2, T4, U0, E0, S0A, S1A and R0. T0 shows an anomalous behaviour.

	JINJ SLAVES Error Report														
	T2	T3	U1	T0	S1A	S1B	S0A	S0B	U0	T1	R0	R1	E0	E1	J1A
04 0-Reply END	4	4	0	0	4	0	4	0	4	4	4	0	4	0	0
05 Timeout	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
0e Build error bit 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 EVBLD ev # mismatch	6960	6960	0	6972	6960	0	6960	0	6960	6960	6960	0	6960	0	0

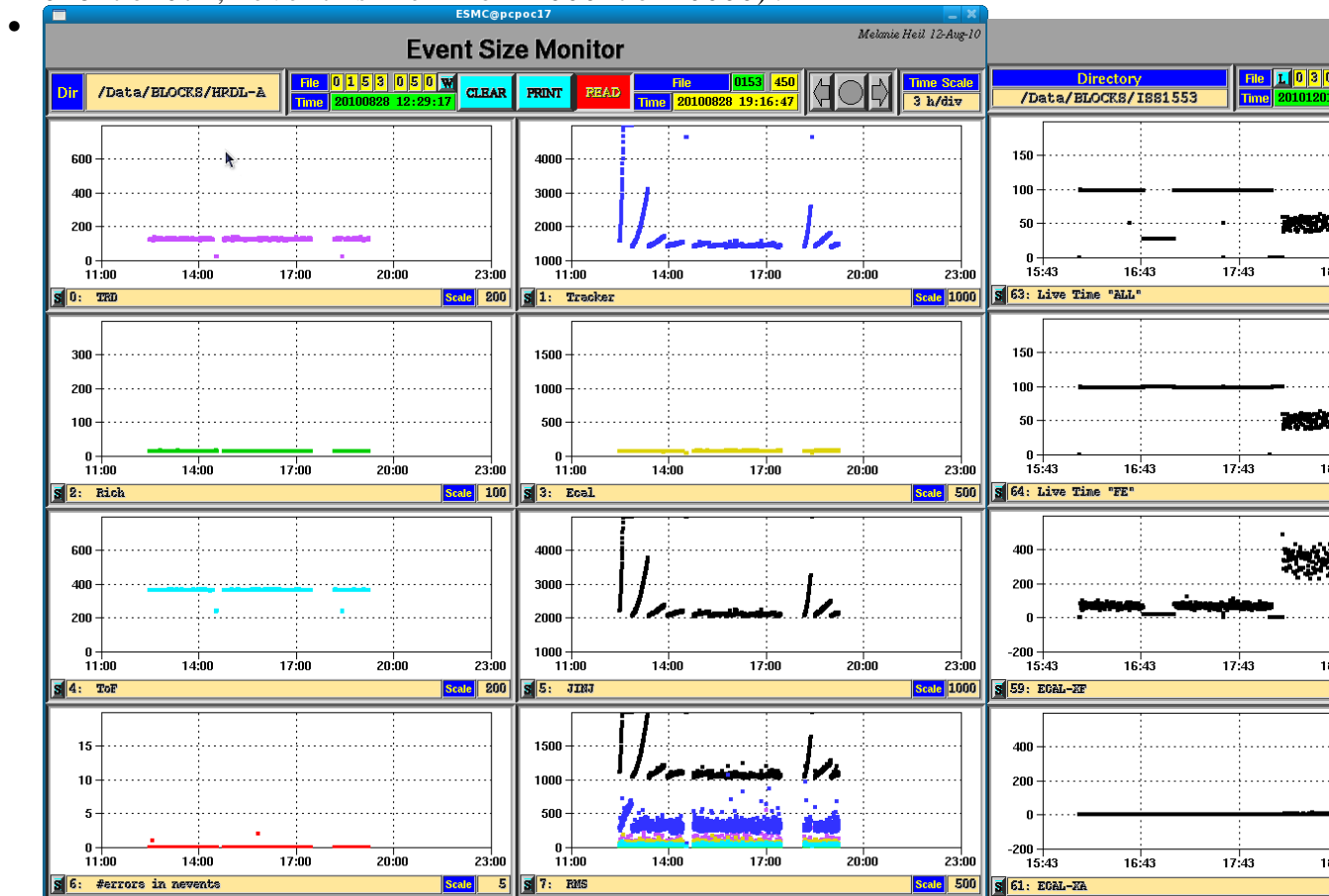
**29 August 2010**

- NO DAQ because of HRDL problems

**28 August 2010**

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- The power step file used was the same of the beam test: DSP code file 3a33, configuration file 7011: this imply NO dynamic pedestal.
- Tracker was OK, but event size was increasing very fast right after power on: we know this happen with temperature variation, but the slope was huge as seen in the plot below (HRDL-A/0153 Blocks from 048 to 071, event size from 1000 to 10000).



- Example of statistics in a stable "good" condition (block 0153/073):

*Selected trigger ev.: 3181*  
*Data taking time: 60.0 sec*  
*Approx Selected Trigger Rate: 53.0 Hz*  
*Approx Reconstructed Tracks Rate: 35.8 Hz*  
*Approx Track Rec. Eff. for the Sel. Trig.: 67.6 %*  
*Approx Average Event Size: 1049.0 words*  
*Average Number of RawCluster per Event: 65.3*  
*Average Number of Cluster per Event: 17.9*  
*Average Number of Hits per Event: 15.0*  
*Average Number of Tracks per Event: 0.5*  
*Average Number of Hits per Track: 6.1*

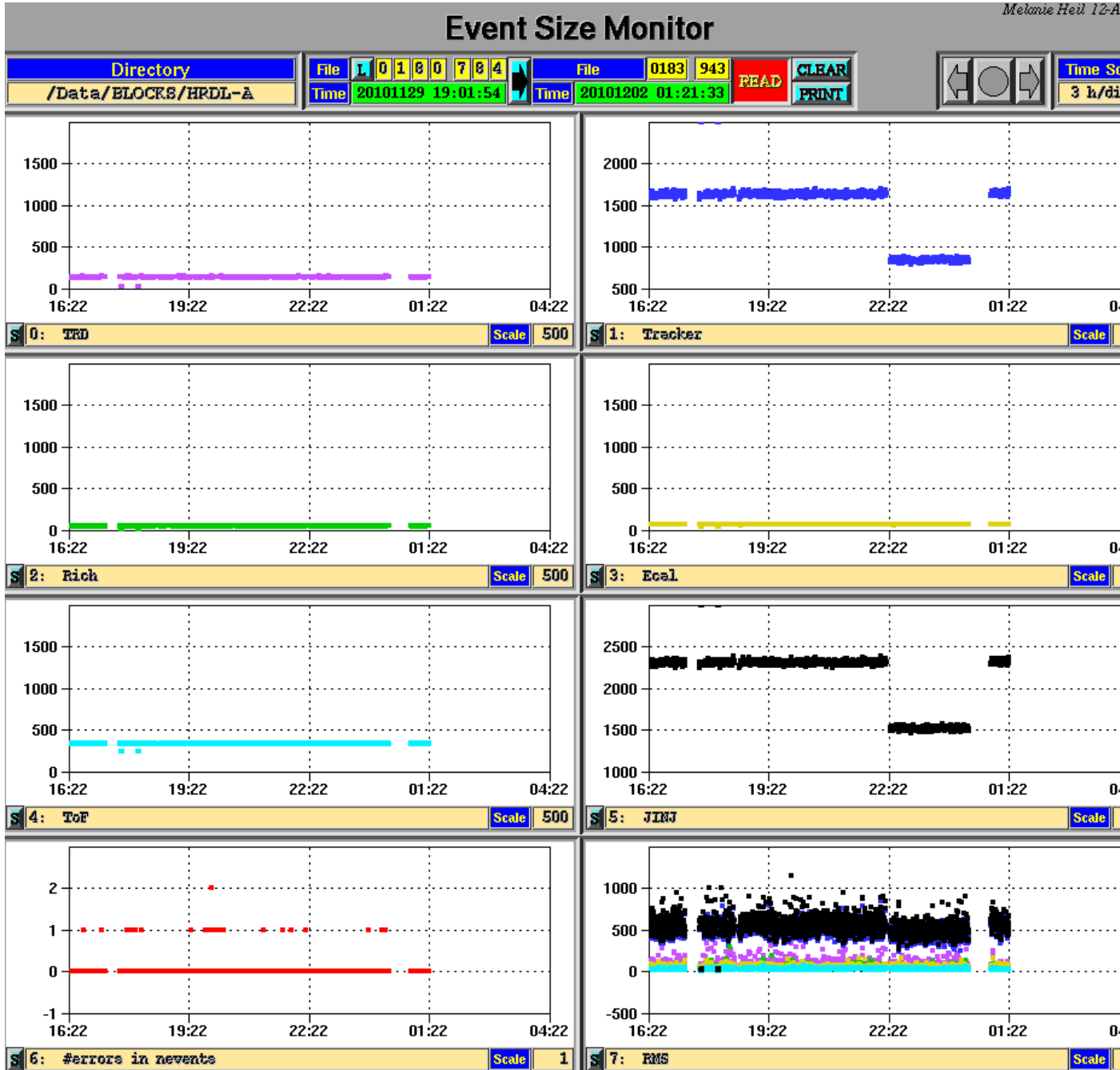
- Example of statistics in a "bad" condition (block 0153/059):

*Selected trigger ev.: 3225*  
*Data taking time: 60.0 sec*  
*Approx Selected Trigger Rate: 53.7 Hz*  
*Approx Reconstructed Tracks Rate: 35.2 Hz*  
*Approx Track Rec. Eff. for the Sel. Trig.: 65.6 %*  
*Approx Average Event Size: 3938.2 words*

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Average Number of RawCluster per Event: 289.3  
Average Number of Cluster per Event: 93.6  
Average Number of Hits per Event: 93.4  
Average Number of Tracks per Event: 0.5  
Average Number of Hits per Track: 6.2

- AMS was powered on Saturday August 28th at about 12.30.



- Event Size for Trigger Test 5 March 2011:
- trigger test 5 march 2011:

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