

16/9

No BEAM AGAIN TODAY UNTIL 4.
 ALSO NEW PPM RATE ARRIVES AROUND 4.
 SO PROBABLY LITTLE CHANCE TO SEE SIGNALS.

INSTEAD PROGRAM : SET ~~NEW~~ PPM REGISTERS
 ; INVESTIGATE ~~THE~~ JEN LWS AMPLITY.

Something	DAC	17 th CO	DP		
	A	D	B	C	
MC7 #0	0xA8	0xAF	0xA2	0xA8	
MC7 #3	0xAB <small>max</small>	0xA6	0xA9	0xA6	E
MC7 #4	0xA1	0xA4	0x9E	0xA3	Π
MC7 #7	0xA4	0xA4	0xA3	0xA6	
MC7 #8	0xA4	0xA6	0xA7	0xA1	
MC7 #11	0xA5	0xA8	0xA4	0xA8	H
MC7 #12	0xA3	0xAC	0xAC	0xA3	A
MC7 #15	0xAC	0x9C	0xA5	0xA6	D

17/9

RUNNING AT 200 GHz e^- - WE SEE SIGNALS IN
 BOTH -VE AND +VE PH1, SO THE TOWER BALLPENS
 MUST BOTH BE WORKING - GOOD!
 SIGNALS STRONGER OFTEN IN BOTH PH1s.

ONLY SEEN SIGNALS ON DIRECT ANTIQVUE CHANNELS
 SO FAR (ON OSCILLOSCOPE) - WILL TRY DIGITAL
 PATH NOW.

SUCCESS!!

SEEN SIGNALS IN CPM READOUT
 WITH LAR SIGNALS AND PAQ READOUT
 OFFSET VALUE OF ~~98~~ PERCENT
 100

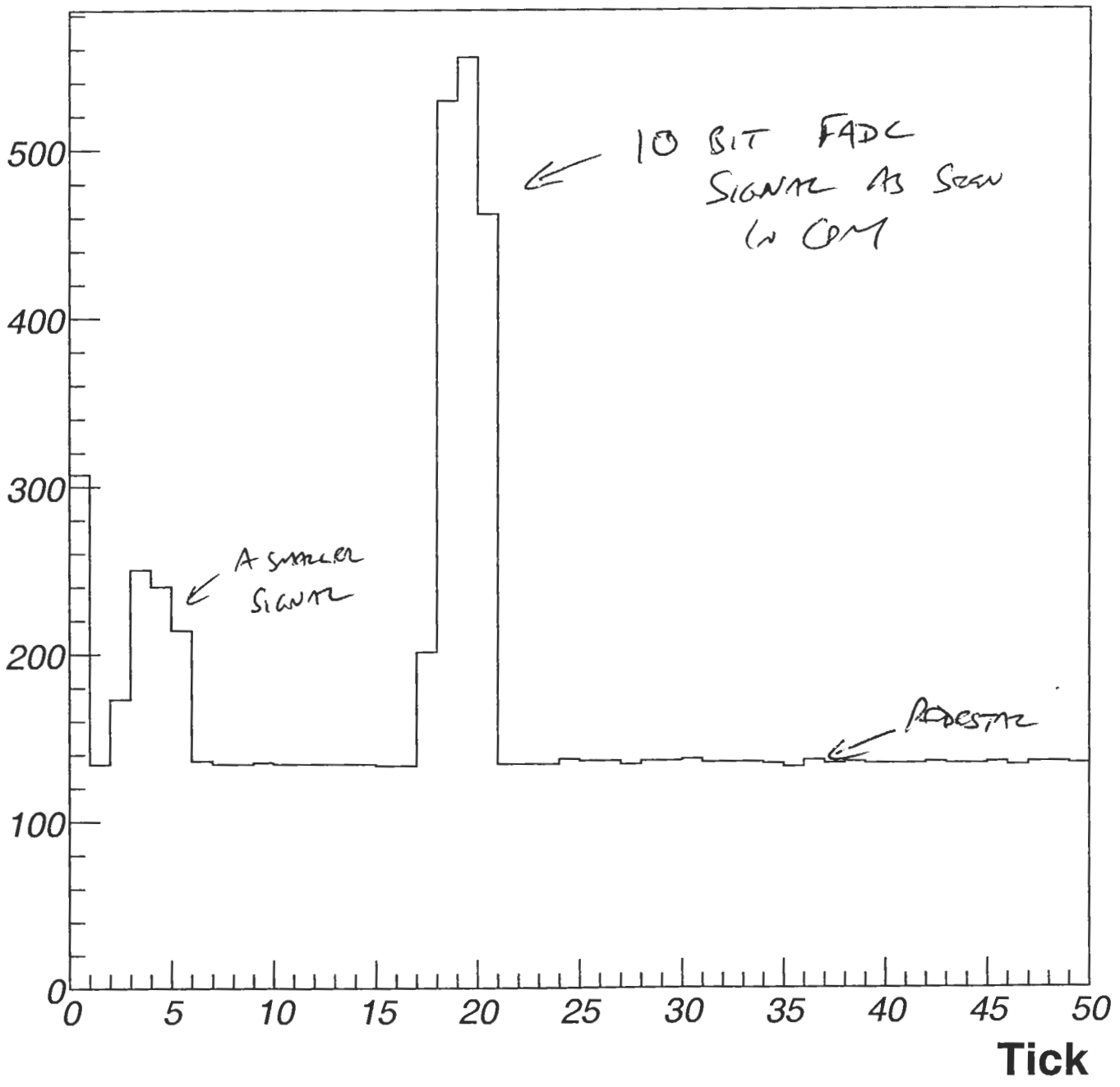
THE ENERGIES DON'T MAKE MUCH SENSE FOR
 NOW, AS WITH A READOUT 10 BIT FADC DATA AND
 THERE'S NO CALIBRATION, BUT THIS CAN BE DONE.
 FIRST TRYING TO FIND JEN PAQ OFFSET

FOUND THE JEM OFFSET NOW TOO AFTER SOME CHANNEL ID PROBLEMS (WRONG CHANNEL + PHI SWAP W JEM COUNTS STILL MAY)

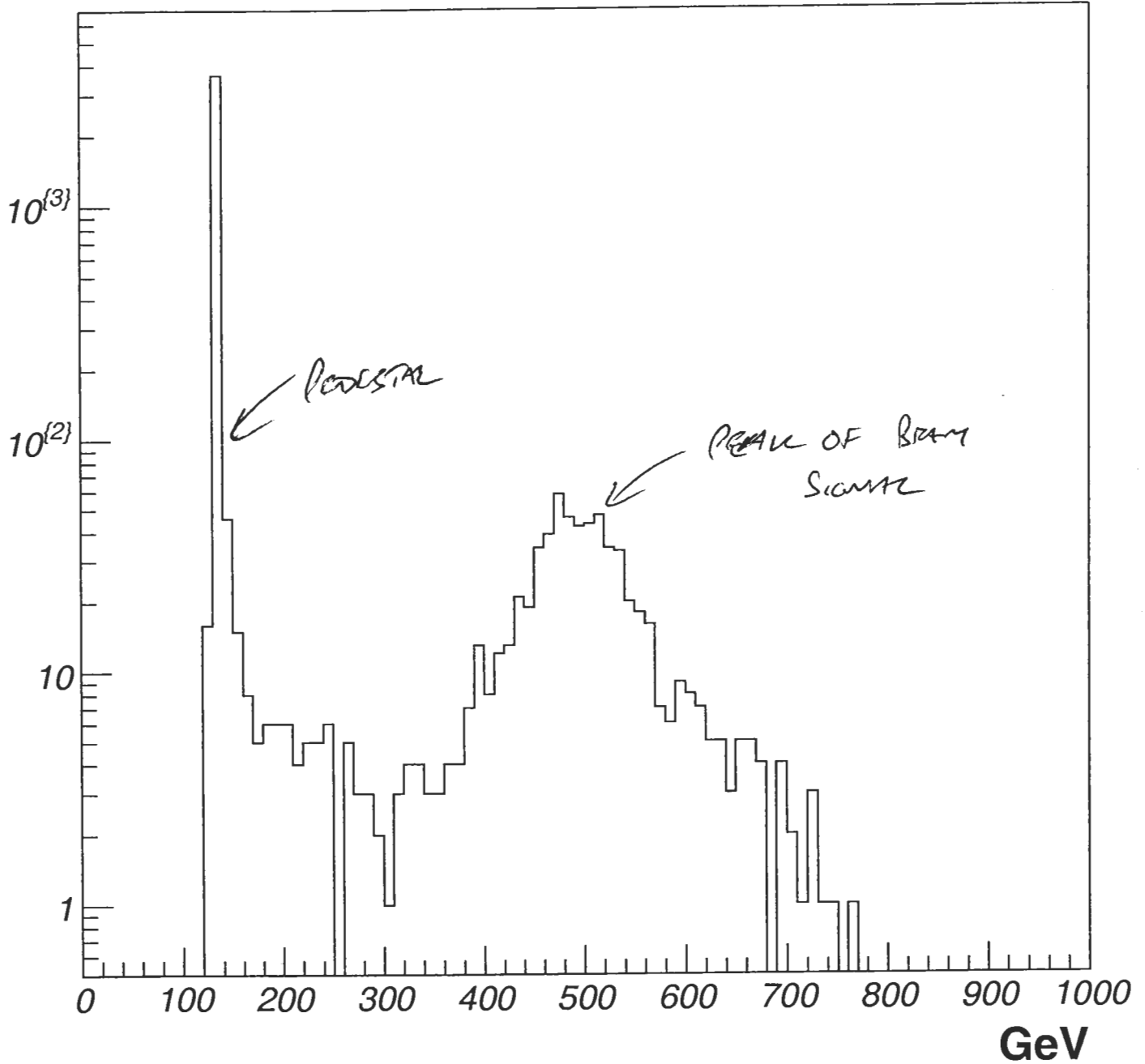
THE CURRENT BEST VALUE IS 35

WILL TRY TO PRINT OUT SOME HISTOS!

CPM EM Channel History eta 0 phi 0



CPM Electromagnetic Sum slice3

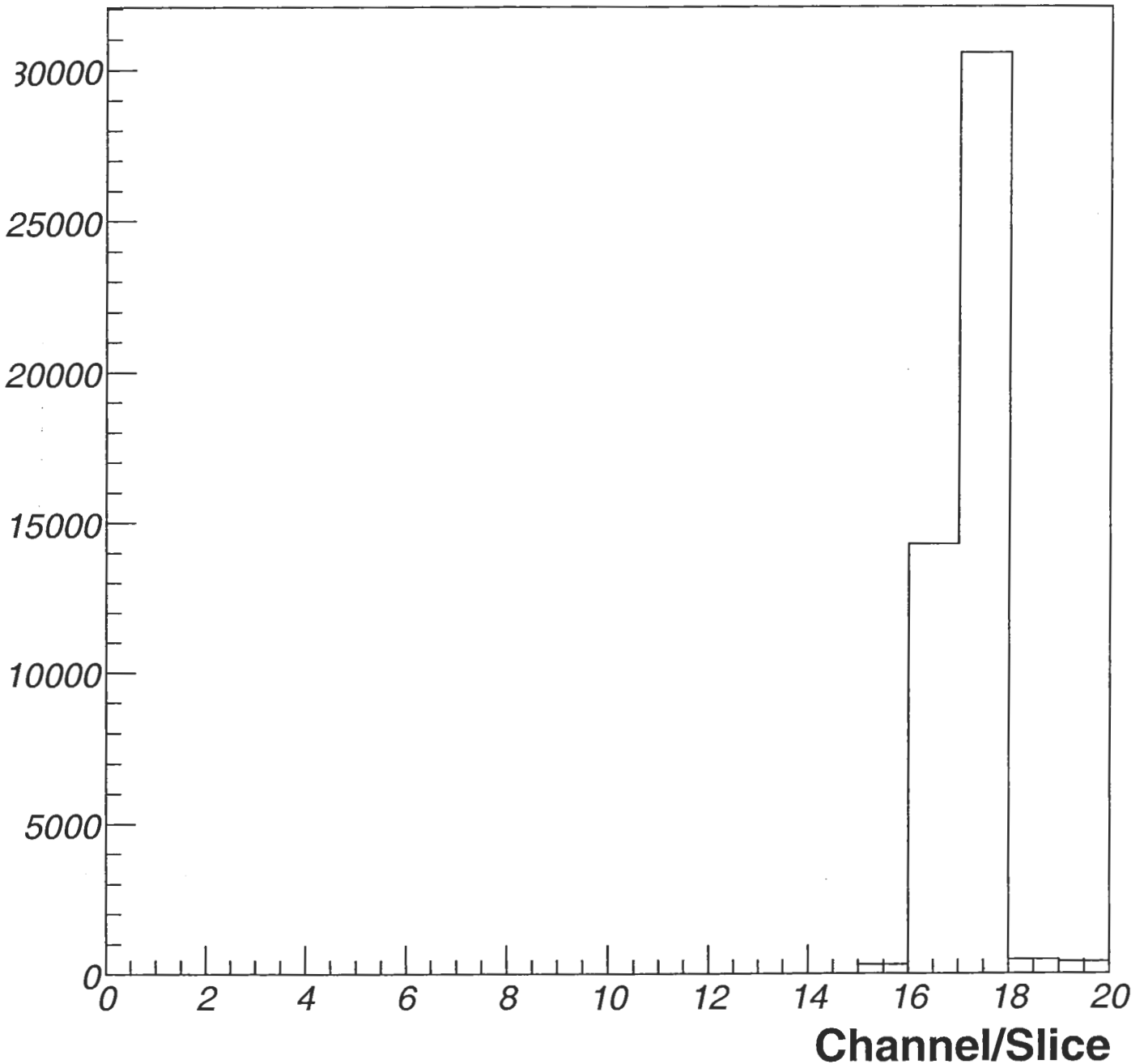


'Energy Distribution' used

ACTUALLY ONLY THE 4th (MAXIMUM) SLICE OF CPM
RESULT OF 10 BIT FADC DATA.

NO CALIBRATION → SO DON'T TAKE THE ENERGY VALUE
TOO SERIOUSLY!

JEM Electromagnetic Slices



EVIDENCE OF SIGNALS ALSO SEEN IN JEM.

^{DIFFERENT FROM PAM}
JEM HAS NO BEAMS MODE, SO USES PEAK FINDER

⇒ SHOULD EXPECT JUST 1 SLICE PEAK

BUT BEAM NOT 25NS STRUCTURED YET + WE HAVEN'T
YET TRIED TO OPTIMISE TIMING.

Other work for 17/9.

More studies of LWS Priority Problem in Jan. Seems on scope look fine \Rightarrow must be a receipt problem - with the PACMS ??? - current mems are not entirely trusted - maybe fixed with new ones.

Integration with Event Structure

Much time spent, some of it with expert help, fixing various problems. Can now run with events being built - another step towards full DAQ integration.

Let system to run overnight

Started 17:12

At 21:25 stopped after 360,000+ events to change PPM settings.

PPM running in binary BEMUX, but can not

man still get make sense of CM data, to work up

18/09/04

9^h20 overnight, No errors ~ 366 000 events

9^h25 \hookrightarrow attempt to break the ROD/ROS by disconnecting \perp CMT & lot of error messages ("event fragment with unexpected LID") but as soon as the CMT was re-connected, the system carried on without ~~any~~ problem!

PLANS FOR THE WEEKEND :-

1) PPM SETTINGS / STUDIES :- ARE SETTINGS SET COMPLETELY BY NEW CONTROL?

Priorities

- DAC SETTINGS
- LOT / DROP BITS
- FIR - USED AT 0,0,1,0,0 FOR THE MOMENT
- BCMUX ON
- NOISE MEASUREMENTS WITH AND WITHOUT CMES

2) LUTS PROBLEMS - JMW DEAD CHANNEL
 - JEM PARALLEL ERROR CHANNELS
 - CPM DEAD CHANNEL

COULD TRY REPLICATING MEMS WITH OTHER OLD MONGS

3) SOFTWARE + INTEGRATION : USE STANDARD QT.
 WILL TAKE SOME TIME TO BUILD

4) SETUP TUNINGS, PLAYBACK FOR CAM / CIP TESTS

BYPASS OF

SPENT SOME TIME TRYING REPAIR ON W/ PPM, AND ADJUSTING LOOK UP TABLES, BUT COULDN'T MAKE MUCH SENSE OF THE OUTPUT. IT LOOKED AS IF AS SOON AS LUT WAS ON DATA WENT TO ZERO - LOOKUP TABLE CONTENTS WRONG?

MICROSOFT HAS RECOMPILED ALL OUR CODE WITH STANDARD QT WHICH SHOULD HELP WITH INTEGRATION. THE SIMPLE EVENT BUILDER PARTITION IS NOW WORKING (PART-LICENSING) AND SHOULD PROMPTLY BE THE DEFAULT FROM NOW ON. THIS MEANS WE ALSO CAN RECORD DATA FILES OF FULL EVENT BUILDER RECORDS, WHICH CAN BE USED IN SIMPLE TBA.

Details: Now using (copy of) qt 3.3.2 installation used by combined partition. Its still a copy, not the actual installation, because we need some extra links.

Our copy is vllcaio-dag/qt-x11-free-3.3.2/ct
 Standard is /opt/qt-x11-free-3.3.2/st.

We are now using libqt.so instead of libqt-kt.so
 changed in qtExternal package.

Also needed to rebuild `gwt` to use the new library (`libgwt`, not `libgwt-kt`)
`uL1Calo-dag/whitdres/gwt/versus/gwt` now points to `gwt-0.4.1-with-gt-3.3.2`.
 Previous build remained as `gwt-0.4.1-with-gt-kt-3.1.2`.

partsegfiles.txt Page 1/1

Sep 18, 04 17:37

ROS
and
HWS
part
_L1
CALO
Sim

Parting Segments & Files.

segments	dbFiles filename	
* * +--ROSandHwSim111_L1CaloSegment	=	
* * +--ROS111_L1CaloSegment	=	} ROSandHwSim111_L1Calo partition
* * +--L1Calo)	
* * +--L1Calo_Sim)	
* * +--L1Calo_lv1c02)	
* * +--L1Calo_lv1c03)	
* * +--L1Calo_lv1c04)	
* * +--L1Calo_lv1c06)	
* * +--L1Calo_Sim)	
* * +--L1Calo_lv1c02)	
* * +--L1Calo_lv1c03)	
* * +--L1Calo_lv1c04)	
* * +--L1Calo_lv1c06)	
* * +--L1Calo_Sim)	} part_L1CaloSim partition
* * +--DFM111_L1CaloSegment	=)	
* * +--SFI111_L1CaloSegment	=)	
* * +--EB111_L1CaloSegment	=)	
)	these files are
)	only in /daqsoft
)	/databases/v3
)	/EventBuilder
	=)	/segments

NB variations without L1Calo_Sim segments and controller also exist in files without "Sim".

ROS PC = pctb - kvlc - ros φ1

DFM PC = pctb - kvlc - sfo φ1

SFI PC = pctb - kvlc - sfi φ1

Default partition is now including event builder.
 => part - UCaloSim.

NB this default is set for both task and bash
 in `~/scripts/ulcalo.csh` and `~/cshrc`

The event building partition uses two extra PCs
 which are not heavily used by anyone else

The DPM runs on `pc1b-lcr-sf01`
 - this is not a heavy load process, so this PC
 could be used to run the GUI as well

The SFI runs on `pc1b-lcr-sf01`

Writing data to disk

GUI → Run Parameters tab → Recording Enable
 Click OK button.

Data is written to local disk on SFI PC (`pc1b-lcr-sf01`)
`/data/ulcalo/standalone/`

Take care not to fill up the disk!

Remember to disable recording when not needed.

FURTHER JEM PARITY INVESTIGATIONS.

* IT TURNS OUT IF DPM IN PARITY MODE (RAMP 177A)
 MODE ⇒ NO PARITY ERRORS.
 MAYBE BECAUSE HIGH BITS NOT SET ??
 WILL INVESTIGATE FURTHER

Using BCMUX (ie Net Boss) AGAIN
TO LOOK AT DATA.

COULDN'T MAKE SENSE OF LOT BEFORE, SO
THIS TIME USE PIC SOFTWARE TO GET
PEDESTALS DOWN TO 20.

NOW SEEING SENSIBLE RESULTS W (PM AND)
JLM.

CPM DATA OFFSET NEEDED TO COVER ONE
SINGLE PULSE SEEMS TO BE ABOUT 103
(IE EXTRA LATENCY OF 3 TICKS).

ADDED NEW HISTO OF CPM vs JLM
ENTRIES, WHICH LOOKS GOOD.

WILL RUN OVERNIGHT TO SEE IF ANYTHING
BREAKS + GET SOME STATISTICS ON HISTOS.

SUNDAY 19 SEP

9:00 Overnight run ~ 10³ million events.

~ 2500 ROS errors
(fragment lost, all 3 ROS)
~ 11000 SFI warnings
(linear: no fragment at all)

LAT at $\eta = 1.1$ from $\sqrt{s_{\text{set}}}$ to $\sqrt{s_{\text{run}}}$ } energy scans with e & π
 $\eta = 1.2$ - 01.45 to now } (separately) from 200 GeV to 10 GeV.

10:30 Warning checked minimal time between 2 LATs
Appears to be > 50 ps.

Data from ROS to SFI contains only empty ROS fragments
and all are given new source IDs: 0x7101, 0x7102, 0x7103.

Changed all our ROS source IDs to match this convention
 \Rightarrow SFI no longer throws away our data.
Take data to disk over lunch.

Sorted raw (1055) AFTER 18/9/92 EVENTS

35

IT WROTE TWO FILES.

dag-sf1-111-0001055-file on data n=1,2.

COMBINED SIZE > 0.5 GBYTE!

NOTE THAT ON WEIGHT VECTORS U.F. (CORRELATION BETWEEN CPM AND JEM ENERGIES FOR MOST EVENTS, BUT ON ABOUT $\frac{1}{3}$ THERE WAS NO ENERGY IN JEM DATA - COULD THIS BE THE ORIGIN FROM PULSAR?

GILLES + UMBRIZ SPENT SOME TIME SETTING UP CONTENTS, AND THE RESULTS APPEAR TO BE AS EXPECTED NOW

MONDAY 20 SEP

~10.00 - 12.00. Try (and succeed) integrating UCalo segments into the testbeam combined partition.

(part-combined, runs under atbeam account)

Some problems with simulation setup: need to set permissions on ucalo-dag/vectors to all run

TTCVI LIA source is 3 for combined run.

BSY module configured (by hand) Mark Ox e - need to do this properly in future.

Tested data taking at various trigger rates up to few kHz.

Took 1000 events to disk, file as petb-tile-sfsoφ1

/data/combined.

Run 2100802

Will be copied to CASTOR: /castor/cern.ch/atlas/testbeam/combined/2004

DAC Settings 20/9/04 (doc) [plus plots.]

	A	D	B	C	
MCM 0	$\begin{pmatrix} 1,0 \\ 0,0 \end{pmatrix}$ 169	(0,1) 173	(1,0) 161	(1,1) 168	} EM
MCM 3	$\begin{pmatrix} 0,2 \\ 1,0 \end{pmatrix}$ 168	(0,3) 170	(1,2) 170	(1,3) 167	
MCM 4	$\begin{pmatrix} 0,4 \\ 1,3 \end{pmatrix}$ 173	(0,5) 179	(1,4) 170	(1,5) 176	
MCM 7	$\begin{pmatrix} 0,6 \\ 1,7 \end{pmatrix}$ 177	(0,7) 177	(1,6) 176	(1,7) 179	
MCM 8	$\begin{pmatrix} 0,0 \\ 1,7 \end{pmatrix}$ 175	177	179	172	} HAD
MCM 11	176	175	169	174	
MCM 12	177	177	177	180	
MCM 15	177	173	178	184	

TALKED CMM OUTPUT FROM CP-CMM TO CAP-INPUT MODULE. - GOOD NEWS AND BAD!

THE DATA (MOSTLY) GOT THROUGH TO THE INPUT MODULE BUT THERE ARE A FEW PROBLEMS:

- 1) THE POLARITY OF SIGNALS IS REVERSED!
WRITING COMPARED SPRES AND RETRIEVED THIS WAS TRUE
- 2) BIT 1 (IE SECOND LOWEST) IS MISSING - ALWAYS READS HIGH: THIS WAS A KNOWN PROBLEM WITH THE CABLE
- 3) THE PARITY BIT IS IN THE CORRECT PLACE BUT IT COMES ONE TICK TOO LATE. POSSIBLY THIS COULD BE SOLVED BY CHANGING THE INPUT TIMING AS PRESUMABLY THE CMM SENDS THE PARITY BIT A FRACTION OF A TICK LATE

OTHERWISE ALL 25 BITS TOGGLE CORRECTLY!

THORSTEN SUGGESTED GETTING A NEW CABLE MADE UP TOMORROW AND TRYING AGAIN.

MEANWHILE TWO OPTIC CABLES HAVE BEEN LAID TO THE QOTB. AT ~~THE~~ OUR END THEY ARE LABELED CAL 01 AND CAL 02 AND CAN BE FOUND DANGLING NEAR THE ROD CRATE.

OTHER GOOD NEWS, I'VE MANAGED TO READ THE COMBINED RUN DATA FILE TAKEN EARLIER TODAY
(dog-SFO-51-combined-2100802-file 01.data)

USING THE BITSTREAM DECODER PACKAGE - ENCLYPTURE CODES FINE - ~~BUT~~ EVENT STRUCTURE OK AND INCLUDES CRM, JEM AND CMM FRAGMENTS. THERE'S EVEN SOME DATA AND FITS IN THERE!

I'VE TRANSFERRED THIS FILE TO

/AFS/CDW.CH/ALIS/PROJECT/DATA/LEVEL1/CAL0/DIA/TX00504

MCM 3 channel A - some fits 're hanging
MCM 3 ch D - noisy
MCM 4 ch A - noisy
MCM 7 ch D - noisy
MCM 8 ch D - noisy
MCM 11 ch A - noisy
MCM 12 ch C - noisy

PPM status: LUT table would not be set, but now can.
Florian wants to load LUT from online.

120_(10bit) LUT. Florian, Bruce, to agree.

the PPM watch to set FIR coefficients. Wed evening

Second crate. Kramlich wants on it. New MCMs in 2nd board. (21 instr new).

JEM - new f/w version to diagnose parity errors.

JEM2 will come on Monday. Will need testing. Mg not be possible
stepan will come Tuesday.

New s/w for LVDS phase detection.

CPM

↳ some CP chip register config - TEM VME connector problem?
VME handling of CP chip.

check CPU seating.

ARTILLA to bring backplane repair kit.

CPM Timing.

CTP chg signal priority.

Rob Jim Schlereth. He has hda M/W. Wednesday?
Change of f/w in PPM not to pin Rob.

Rob, Roy, Dave Inky.

Integration into whole system. Bug is set up by hand.
Adapt to Module serial.

LTP from the center room.

Some ID Numbers - one written in SFS. New to investigate with Benedek.

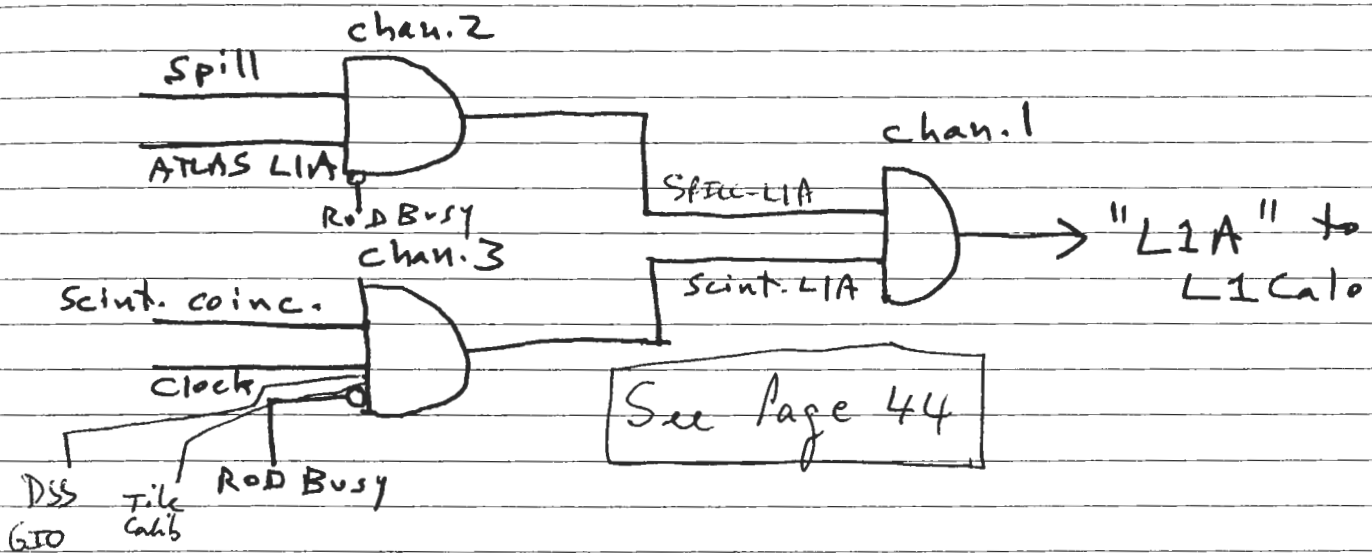
Byrdman Decoder.

Move to online monitor from ADS.

NIM logic (continued from p. 22)

Clock has now been added (I don't know by whom - Thorsten?) to scint. coincidence. It goes via a discriminator to set width - this allows setting trigger more constrained in time over 25 ns intervals. Discr. width is what does this. Also, someone has realised how to ~~set~~ demand that the ~~scintillator~~ scintillator coinc. is during a beam spill.

To understand how to select buttons on coinc. unit (EOS 2nd anti, slot II), here's a simpler diagram (Button in demands that input, button out ignores it) (Full diag. on p. 22)



Broken pin on ~~the~~ TCM Backplane connector
 Connector 1 - <D04>

1	<G>	VHDD0	VHED08	VHED09
2	D01	V07D02	V07ED10	V07ED11
3	<G>	VHDD3	V07ED12	V07ED13
4	<u>D04</u>	VHDD5	V07ED14	V07ED15
5	<G>	V07D06	VME A23	VH A 22
6	D07	<G>	A21	
7			<G>	

* FOR BUSY-GATED DSS-GIO TRIGGERS • Disable ch#3 Scint
 • Disable "Spill LIA"
 select TIC input - assumed = "2"
 Bruce

Crude timing of BP errors from CPM in slot 3.

Timing	Errs	Ews	Ews
0	Yes	No	Max No
40	"	No	No
80	"	No	No
120	"	No	No

Deskew 1 ϕ Deskew 1 30_{10} ($\approx 3 \text{ nSec}$) 15_{10}

System settings were changing as well.

22 Sept

① ROS Behaviour. BB spent 1 hr with Benedetto Gouini to try to understand zeroed fragments with "BAD" source IDS. I put the source IDS to their original.

Rod 1 7200

Rod 2 7300

Rod 3 7208

(should be 7248 !)

→ changed to 7248.

We set up "Busy-gated" DSS-triggers and run from $\sim 1/6$ to 2500 kHz but were able to see no problems.

It might be that the problems that were experienced are spill-related (long gap between events) - in that time may occur in DFM or SFC.

Benedetto and Simon will help again ^{when} if there is beam.

ROI-Build

Connected CPoD ϕ with CP/ROT flow to RoIB via HoLA. RoIB (Jim Schlereth) sees fragments, but there appears to be bit errors on low-link. Jim will investigate - we are providing him with PoD fragments ^{needs to}

NB CPM RoT should be properly setup! (PQA offsets) and probably has not been.

* CAVEAT The 2nd link on the PoD ϕ is not connected to anything in the database - hence busy will not be active to make get Busy Module

"Cbd" ^{module services} have been converted to control the busy module. The busy mask is (for the moment

hard coded to 0x0A. (getBusyMask() in

Cbd.cxx.

→ New uses RoT interfaces connected mask 21/8jt

TRIGGER for Pedestals!

NB - for DSS triggers - see Page 39

* CAVEAT - created a second RoT interface for RoIB on the 2nd S-link. Enabling this now renders the busy - if the PoD link-mask is ~~0x03~~. But - NO separate output file appears.

23 - Sep - 2004

edit me

↳ Partition

↳ Partition - combined

↳ Select segment

↳ Right-click

↳ Remove object

To re-insert.

Segment

↳ Right-click

↳ Right-select

↳ - - -

Parent Trigger. Chan 1 ~ Input 2 enabled
 2 ~ Input 1 enabled
 3 ~ Input 2+3 enabled

Tile calibration signal

(1) The signals they inject are set by values in XML database file.
 80 pc per calor cell per MT (1.2 pc \approx 1 fwhm)

$$E = \downarrow \times 3 \left(\frac{\text{cell}}{\text{tower}} \right) \times 2 \text{ (MT)} \div 1.2$$

Henric Wilkens 16 38 45

Test with J. Schlereth.

OBIN work from another JEM data rod but not from "PPL" rod.
 which is the same rod as HOCA failed on.

File settings for calibration pulser.

: Charge 0 - 1023
 : Cap "100pF" or "5.2pF"

$$E: \text{ if } \begin{matrix} 1023 \\ 1023 \end{matrix} \text{ then charge} = \begin{matrix} 800 \mu\text{C} \\ 40 \mu\text{C} \end{matrix} \begin{matrix} (100 \text{pF}) \\ (5.2) \end{matrix}$$

Then again pc \rightarrow GeV is $\text{factor: } 1.2 \mu\text{C} = 1 \text{ GeV}$.

They have set 40 on the 100pF scale, which should give

$$\frac{40}{1023} \times 800 = 32 \mu\text{C} / 1.2 \sim 25 \text{ GeV}$$

FileCal delay: The cable signal before delay is about 250ns
 BEFORE the cable signal.

The amplitude in file is set to 50pA, giving $\frac{50}{1023} \times 800 \div 1.2 = 32.6 \text{ GeV/cell}$

$$E = 32.6 \times 6 = 195.5 \text{ GeV, before cable attenuation}$$

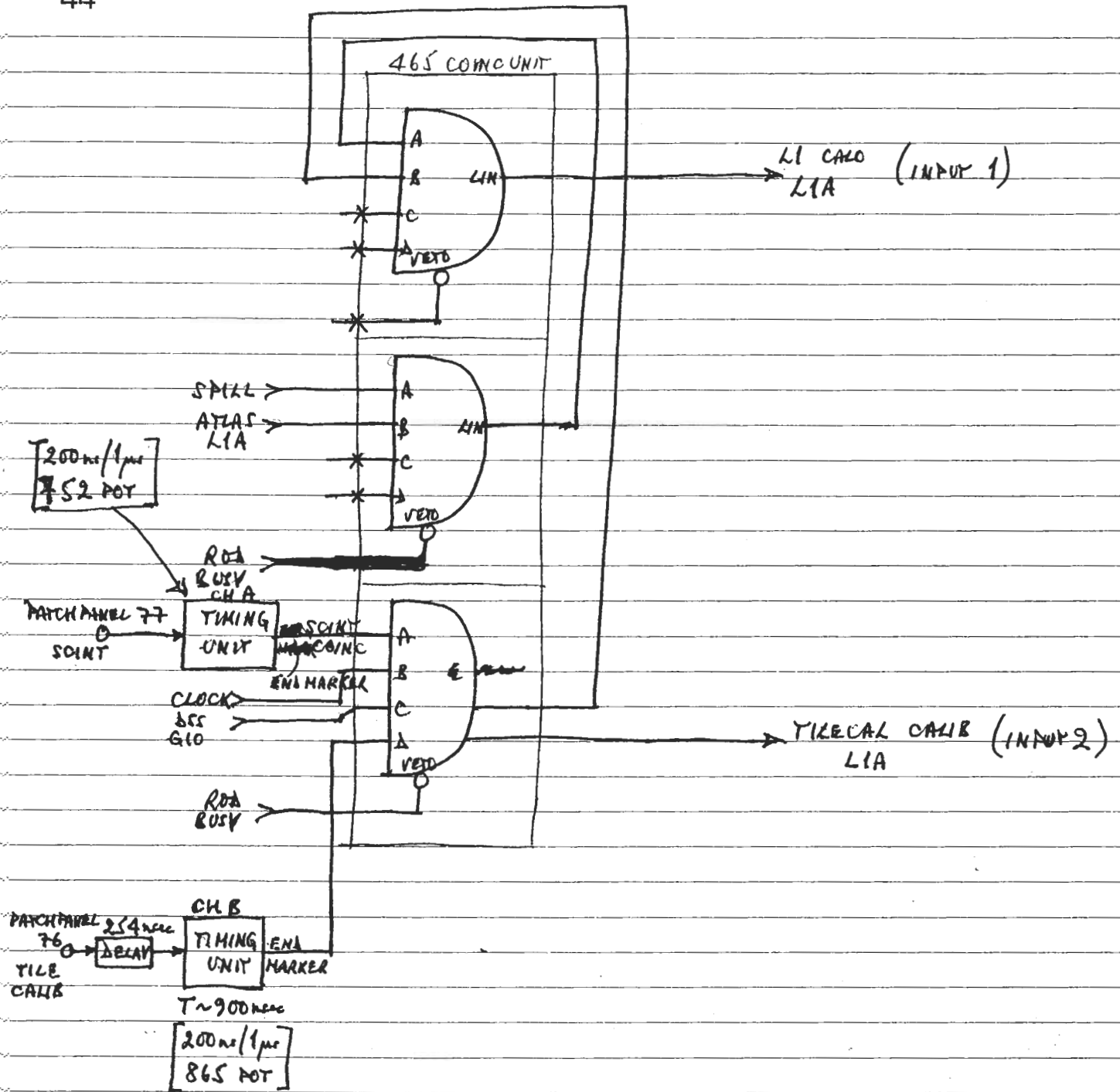
We see 1.5V signal

$$[6 = 3 \text{ depth} \times 2 \text{ AMOs}]$$

24th September 2004

We have extended the NIM-based trigger logic to provide an alternative trigger for calibrating the APH channels using FileCal Qinj calibration pulses (see above note). We are working with 1.5V calibration pulser out of the lx module into the APH, from 195.5 GeV-equivalent signals injected into the 60m cables. We attempted to delay the FileCal calibration trigger pulse to be \sim same time after the analogue pulse as had been already measured ~~for~~ for the ATLAS L1A after beam signals.

A NIM timing unit was set up, together with a 254 nsec delay box.



24-Sep-04 17:10. We are looking at the timing of the ^{Tile} ~~ADC~~ signal.

- We have ~~the~~ tile calibration pulses - energy is 145.5 (GeV) into the tile, lower (see pg 43) and is very stable.

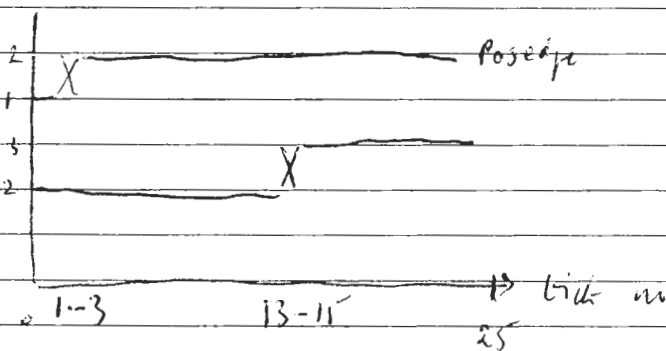
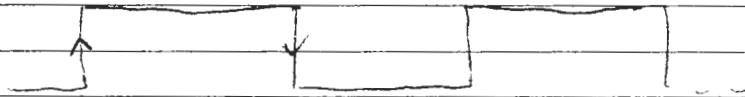
- We have the following condition: 5 slices (set in online (vi))
 No BCmux : Set in PPMWatch
 No BCmux : Set in CPM Serializer 20
 CPM readout delay 89_{ns}

- We see the 5 slices in the histo. The 89 readout delay has been chosen so that the peak sits in the centre of the slice histo.

- We have been trying to use the phase to optimize the fine pulse timing. We do not see the pulse shape changing.

- We have tried changing the latching edge in the PPM. This does have an effect, typically a shift by 1 clock cycle of the signal and some data corruption. This is expected.

^{5 clock cycles}  FADC data



To get the FADC signals latched, the sequence must be

① Select the correct clock phase to capture the pulse

② Choose an edge which is safe

③ Set the readout delay. Later on, we should set the ^{PPM} _{FIFO} readout delay to correct for the edge delay

- After observing No change in timing from Photo 4, we tried moving deskew 1.
- P.M watch panel needs two clicks in the TTC area to make them work. We don't understand why.
- Moving the TTC clock finally DOES function as expected. You need to remember that the TTC delay signals are encoded.

25/9/04 (Saturday) ADC Pedestal

Most channels on most MCMS have drifted significantly. Generally speaking, upwards by ~ 30 (so 120 \rightarrow 150)

(12:30pm)	MCMS	Ch A	Ch B	Ch C	Ch D
	0	+50	+50	+40	+35
	3	+30	+50	✓	+40
	4	+35	+30	+30	+30
	7	+15	+30	+30	✓
	8	+30	+15	+40	+30
	11	+20	+30	+20	+20
	12	+30	+20	+20	+30
	15	30 +15	+30	+15	✓

25 Sep ML: All L1 low software packages were tagged with -02-01-10 versus saving the state as of yesterday. Some uncommitted changes were committed (eg jan-kmz, i Toib).

Then further s/w changes were made

- adding new package busy services
- with associated changes to database, run control, etc.

Changed packages were re-tagged with -02-07-11 suffix.

Some changes should remain uncommitted:

- epn services: mods just for testbeam
- halCore: hardware byte-swapping
- qt External: use different qt library.

Sunday 26 Sept

(@ 10:00 (KM) Low energy beam 2 GeV (a beam of ~ 0.55)

LAr sends no calibration signals during runs
though special calibration runs with ramps.

Run Cal. from tomorrow on: Herbie (77647)

18:00 (ML) 1401 status display showed parity errors seen by ^{both} CMMs
in back plane link from CPM (JCM was OK)

Via HDMC adjusted back plane timing registers by $\frac{1}{2}$ clock
(set phase to 2, before all were 4)
This cured parity errors.

Set this value in CMB-test-beam-timing file & install!

→ Found bug^s in cam sensors - value not loaded correctly
→ now fixed.

* At RAE tests, timing now had to be adjusted, so not checked.

11:15 - Summary of the day: (KM)

PPM DAC setting problems from yesterday fixed

Problems was in the firmware

This fixed last night and tested successfully today.

We continued to look at the T0 calibration pulses.

Offset set in the CPM (DAC Reset offset): 92 (default 103)

with this setting. The calibration signals are recovered in the central slice. §

PPM setting: The default configuration setting of the PPM is appropriate & no changes are required!

This means that:

TTC dest fine delay is the default (3 ns!)

Phos4 delay settings: 12 ns

ADC data latching edge: negative edge.

FIR filter: 0, 0, 1, 0, 0

LUT: pedestal: 120; slope: 256

i.e.: "standard" 10-bit \rightarrow 7-bit conversion
plus pedestal cut at 120 (10-bit value)

with activated LUT.

With these "default" settings all channels have the pulse peak in time slice 3 (or 2 if counting from 0) with the signal height at about 800 (10-bit ADC counts)

See plot (1) for BCMUX Bypassed + non BC deconvoluted version of the pulses.

After activating LUT + BCMUX/BC deconvolving, the BCID results appear in the central slice with a height of about 180 (7-bit ADC counts). See plot (2)

Summing 16 channels (in the hadronic part) would give us a value of about 3000 (roughly) in cpm & actually also in gem. In cpm had-sum plot this also seen. (which is good). gem has time faulty links (parity-error) which results in less energy seen the sum there is about 2000. Ψ

See plots. 3 & 4 ~~4 & 5~~.

Correlation on plots 5 & 6

NOTE : on plot 6 : $\left\{ \begin{array}{l} \text{cpm axis values} + 2500 \\ \text{gem axis values} + 1500 \end{array} \right.$

There is a bug in the monitoring package which does not allow us to have 2d histograms with axis min value ~~other than zero~~ other than zero. Therefore the workaround above.

Several changes/mods in PDM software.

no problems so far \rightarrow will be tagged.

At the moment am working on debugging the new-firmware finally getting (hopefully) to check readout!!

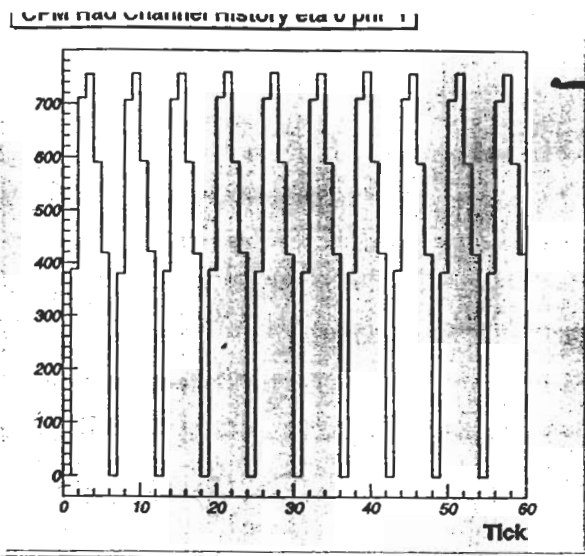
LAr calibration runs today:

But their expert was not around, he'll be here from tomorrow on.

No information concerning the timing & trigger.

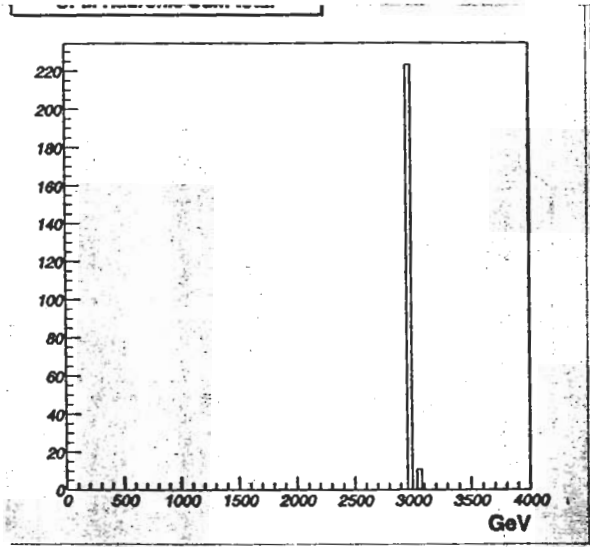
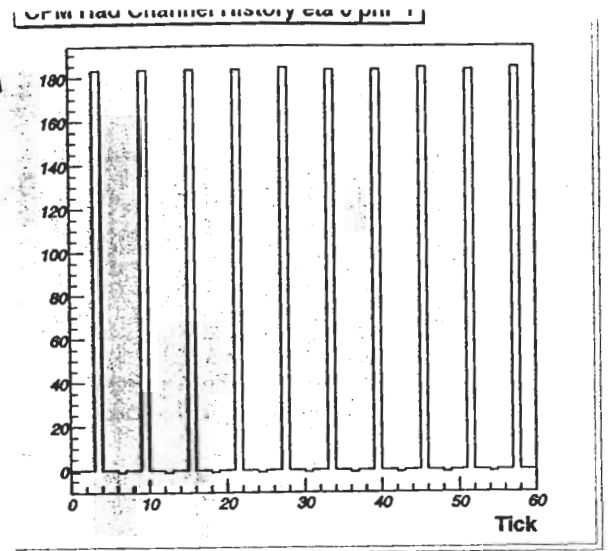
10-bits ADC

(1)

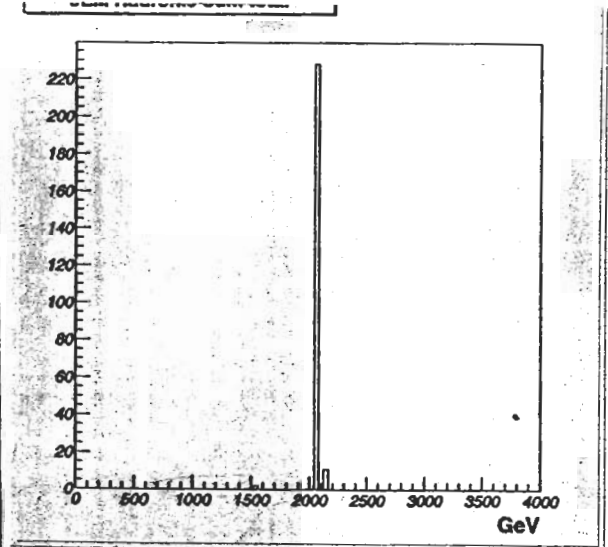


8-bits LUT + BCID

(2)

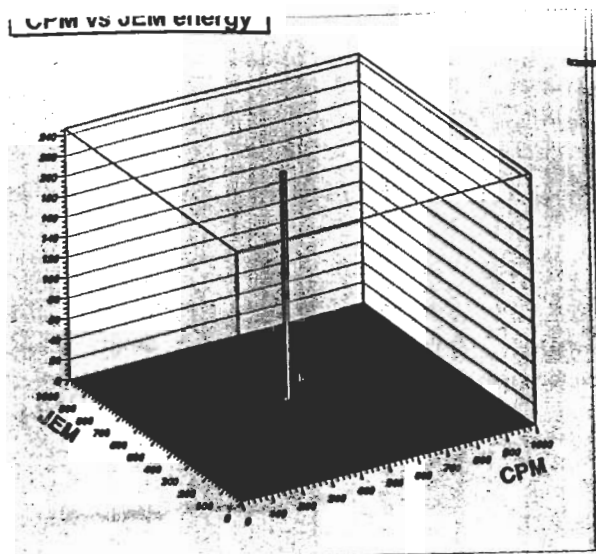


2em HAD sum (3)



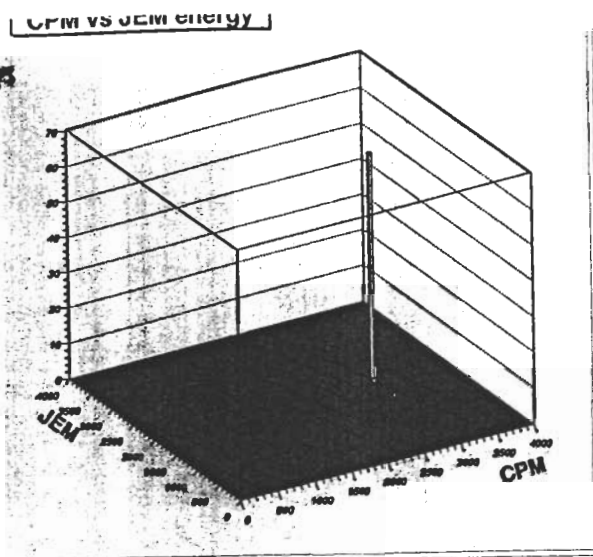
2em HAD sum (4)
(2 ch's parity err's)

(6)



$$\begin{cases} \text{cpm} : x + 2500 \\ \text{jem} : x + 1500 \end{cases}$$

(5)



$$\begin{cases} \text{cpm had num} \sim 3000 \\ \text{jem had num} \sim 2000 \end{cases}$$

How to change DAQ-RO offsets in cpm & jem (for Tile Cal Calib signals.)

cpm: in HDMC \rightarrow cpm0 \rightarrow SrlChip [0:20] <20>

\rightarrow SrlRdAddOffs

{ change the delay from 103 }
to 92

jem: in HDMC \rightarrow jem0 \rightarrow JemSumFpga

\rightarrow ReadRequestDelay REG

{ change the delay from 35 }
to 24

These values are only valid for input (not hits)
i.e. tower & jet element data