

**WEEK 27-28**

**Weekly Report**

# COMPASS

2018

**M. Chiosso**

**Weekly Meeting  
July 13, 2018**

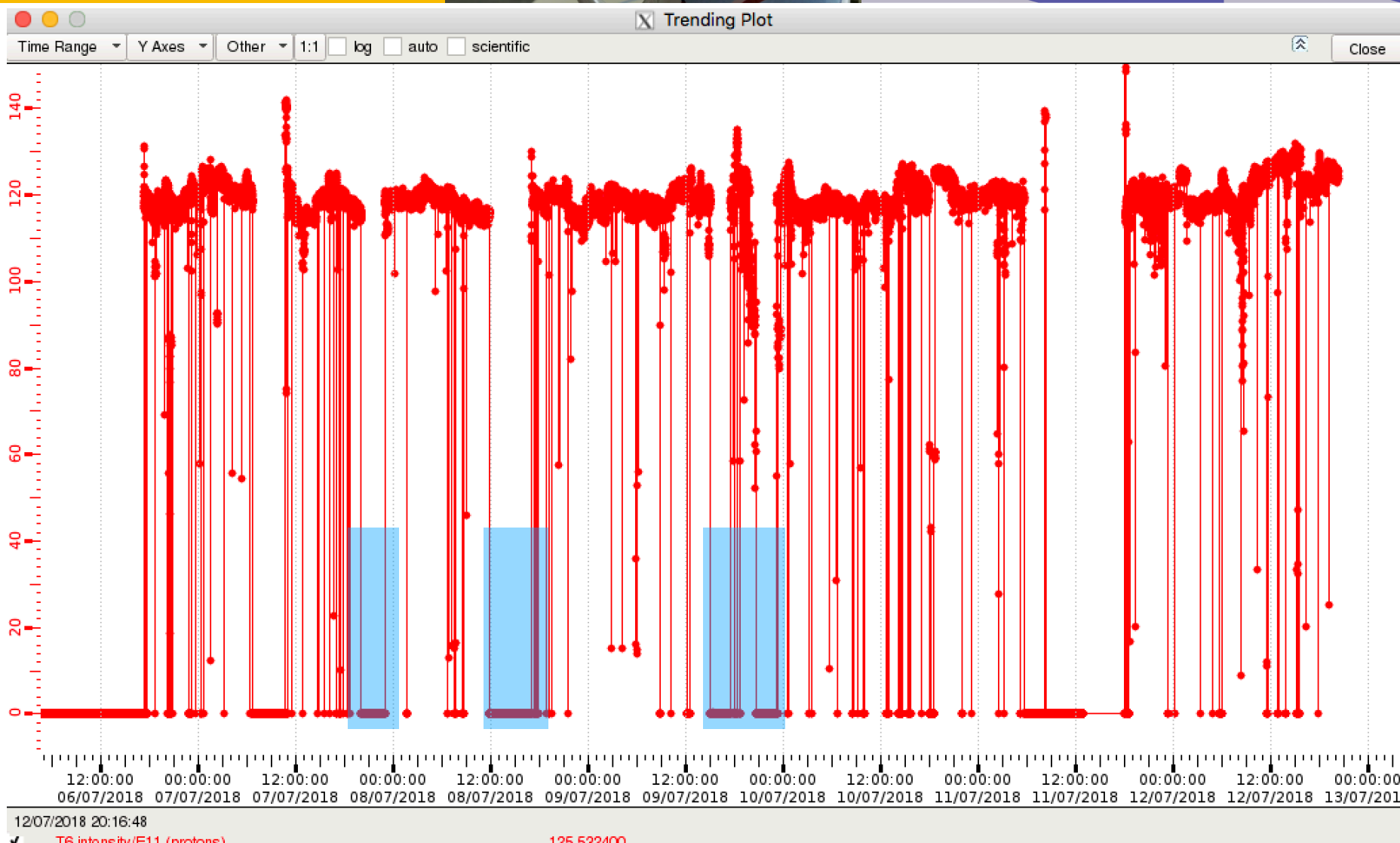


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Beam



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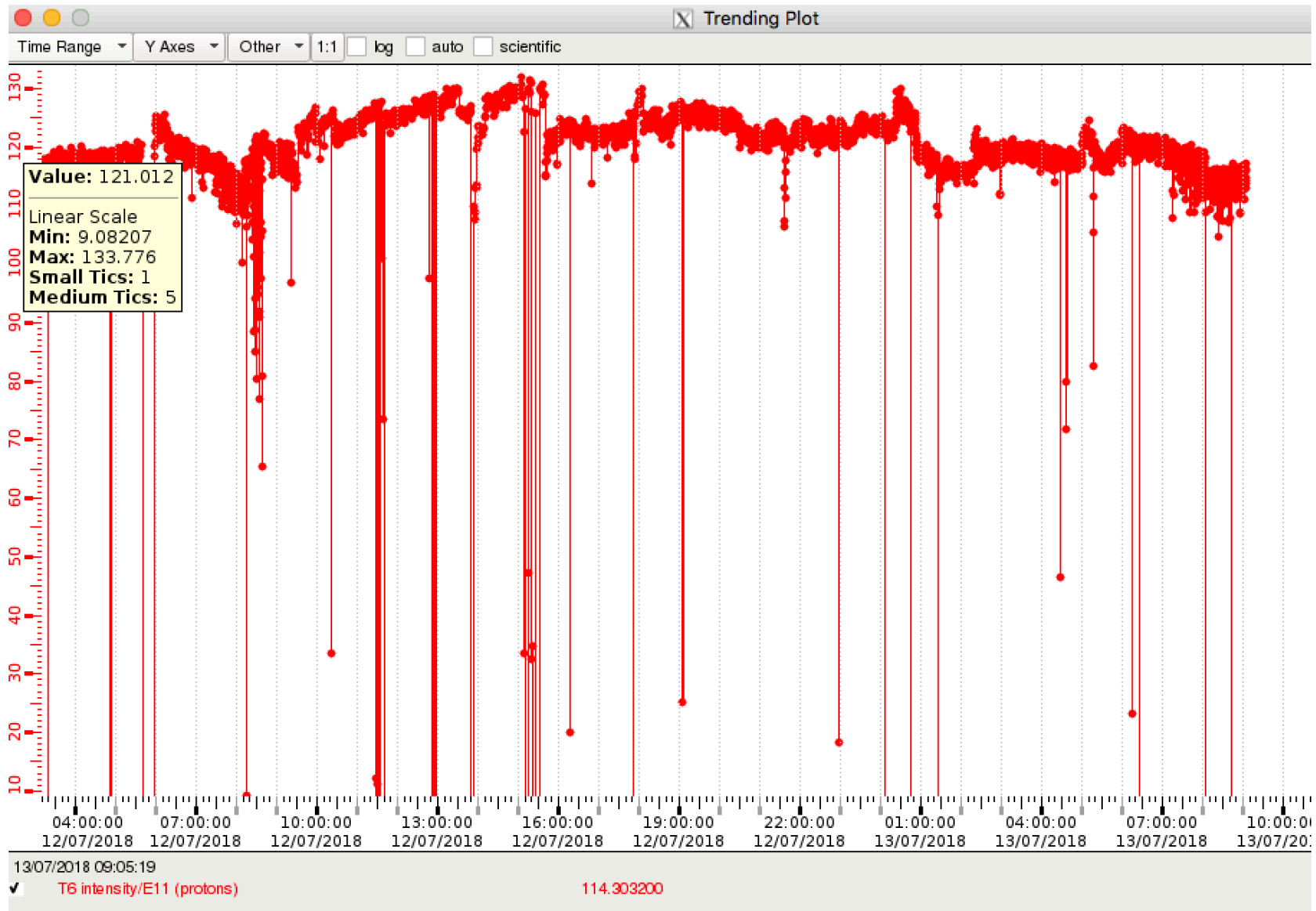
WEEK 27-28

Beam



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2018



WEEK 27-28

Beam



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2018

## Major beam issues

### Sat 07 July 2018

6:41-09:50: no beam due to BLM TT20 High Voltage in fault

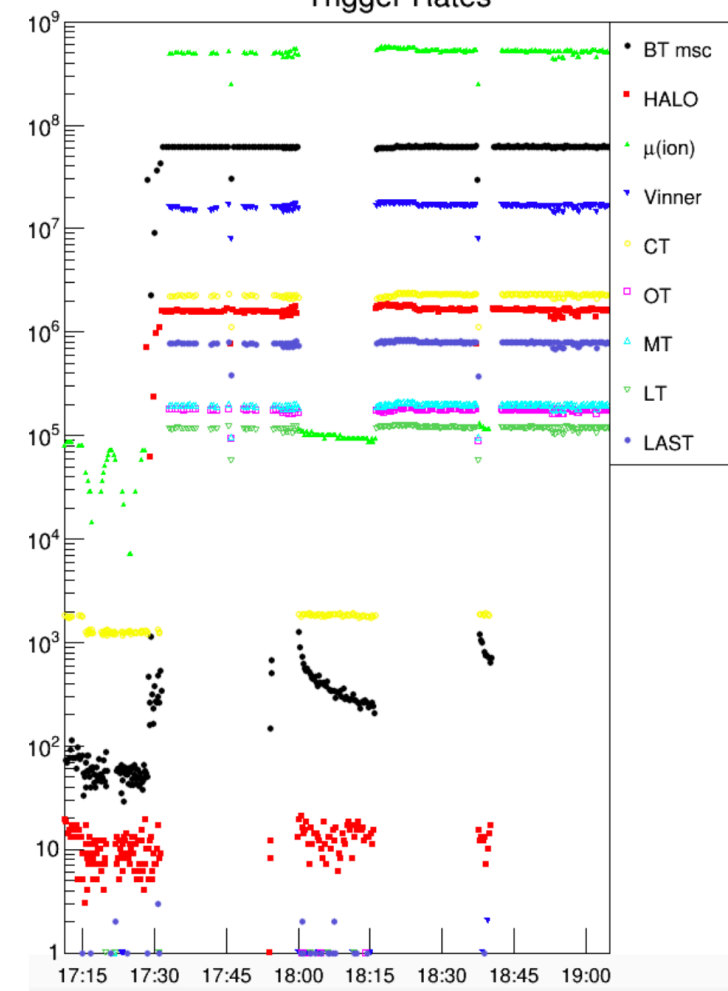
### Sun 08 July 2018

12:00 - 17:00 No beam  
- Syncro problem between PSB and SPS (kicker trip)  
- RF cavity power distribution off

### Mon 09 July 2018

15:00 - 17:00 No beam  
"Intervention required in PSB"  
Then unstable beam until around 23

Mon Jul 9 19:05:01 2018  
Trigger Rates



**WEEK 27-28**

**Efficiency & Spills**



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### Spill count statistics

1. **From PS to SPS:** 26.970
2. **From SPS on T6:** 22.361
3. **From SPS on T6 ( $I > 110E11$ ):** 20.396
4. **Good DY spills:** 17.239

We started new period/subperiod 1 on Friday  
06 July at about 23:50  
Still in sub period 1 until next Wednesday

### Efficiency

**SPS eff.:** about 76%  
(20.396/26.970)

**COMPASS eff.:** about 85%  
(17.239/20.396)

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Target



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### Wednesday MD (08:00-19:00)

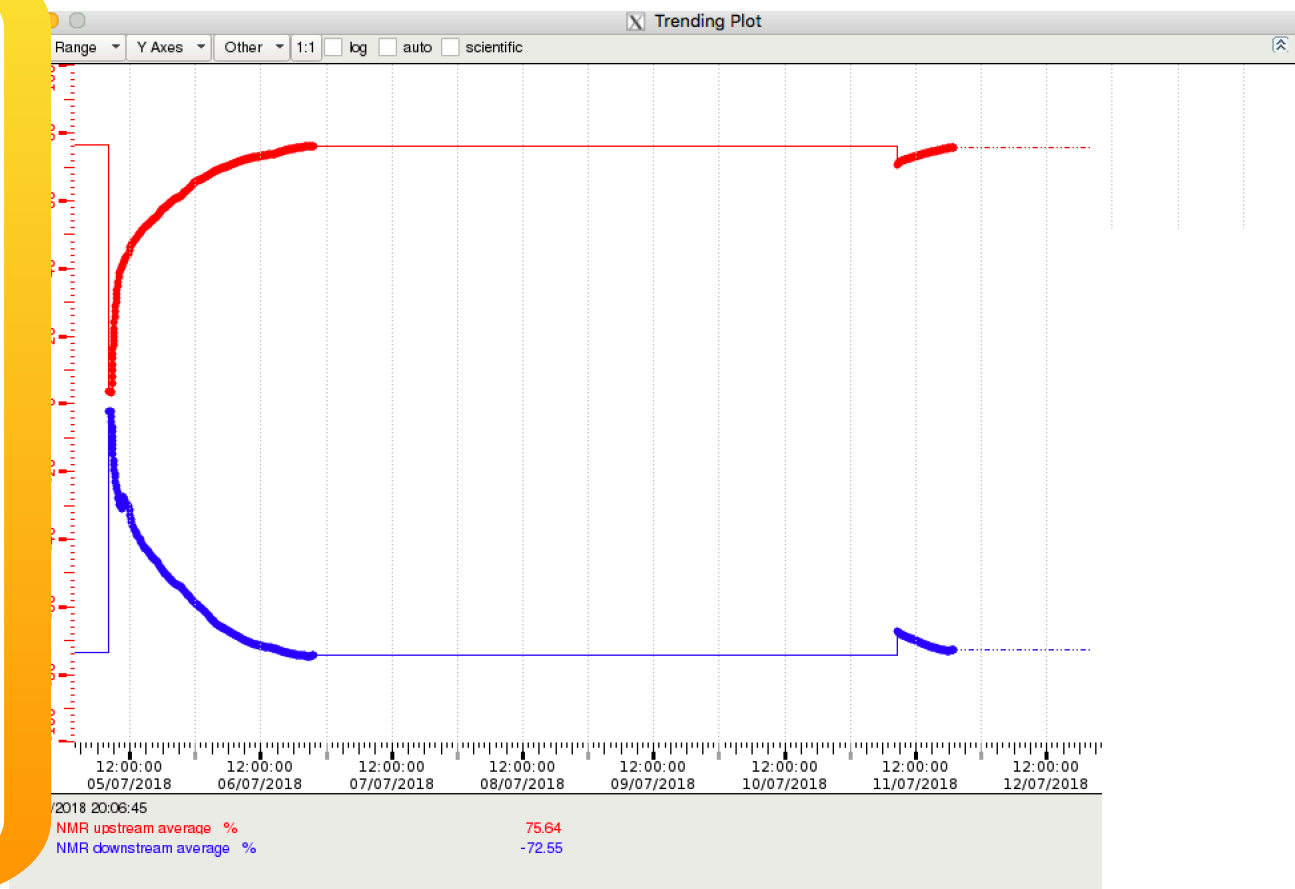
Top up of the polarization

Averaged polarisation measured:

Before MD: + 70.85 % and -67.03 %

After MD: + 75.64 % and -72.55 %

LN2 filling for buffer dewar for LN2 trap and for material dewars were done by Christophe, Vincent and Nori. Filling cooling water for NMR system was done by Christophe.



# WEEK 27-28

## Detector - DC



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DC (before MD - Wed 11 Jul)

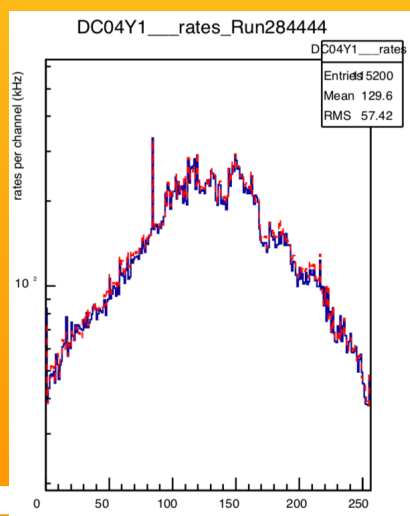
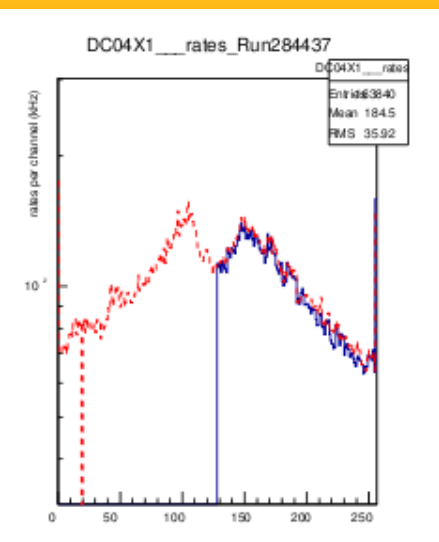
Missing boards (excluded from DB because giving 100%):

DC04X1 SrclD 459 port 0 (on Tue 10 Jul) port 1 (on Wed 4 Jul)

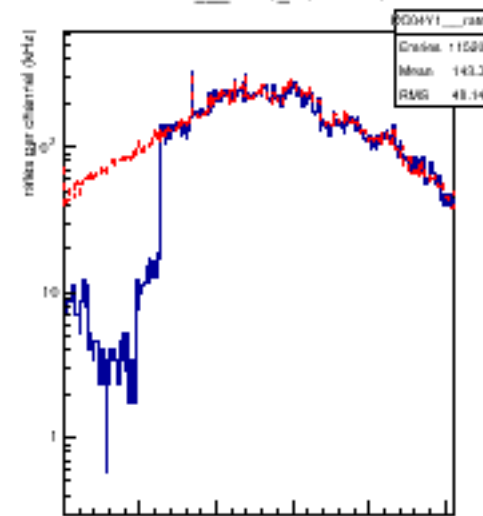
DC01V1 SrclD 256 port 11 Excluded from FEDB (on Sun)

DC04Y1 SrcID 259 port 7 (on Tue)

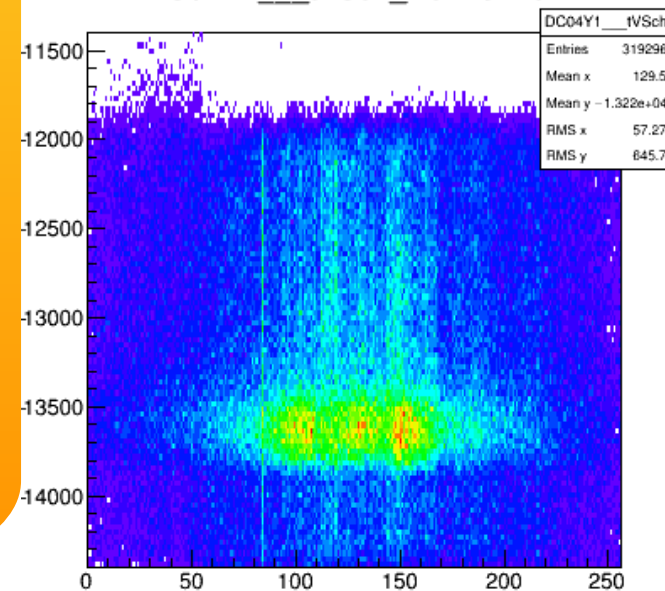
low efficiency part of profile. NO errors on MurthyTV. pccofe20 was reloaded. Seems no effect...recovered after about 2h



DC04Y1\_\_rates\_Run284395



DC04Y1\_\_tVSch\_Run284402



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Detector - DC



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### DC (After MD - Wed 11 Jul)

#### DC01 and DC04 moved in garage position for intervention

(1) We moved DC01 around 9am and removed the shielding.

- We checked the connection at the level of the patch panel (can only be access in garage position)
- Looking at the card, no visible damage.
- Air cooling cables was not properly positioned, which might have increased instability due to temperature.

(2) Then, DC04 put in garage position around 10am (thanks to Vincent and Christophe.)

- We first have checked connection at the level of the patch panel.
- Then I had a look at **SrcID 259#0 and 259#1**. (On top of the detector).

We suspected a deterioration induced by the burned dust on the F1 cards (as discovered the previous week during MD)

Therefore we unplugged the cards and check them. They have been **cleaned using alcool isopropylic. (99,7%) and plugged back onto the detector.**

- Then I replaced the card **SrcID 259#7 (DC04Y1)**. This card was a MM spare card, replaced the previous week, which showed some instabilities. While going to the next step of the repair, it appears that **259#7 ethernet cable broke**

- RJ45 cables have been exchanged on **SrcID 260#14 (DC04V2), 260#1 (DC04X2).**

All the missing cards  
were recovered after the  
Intervention



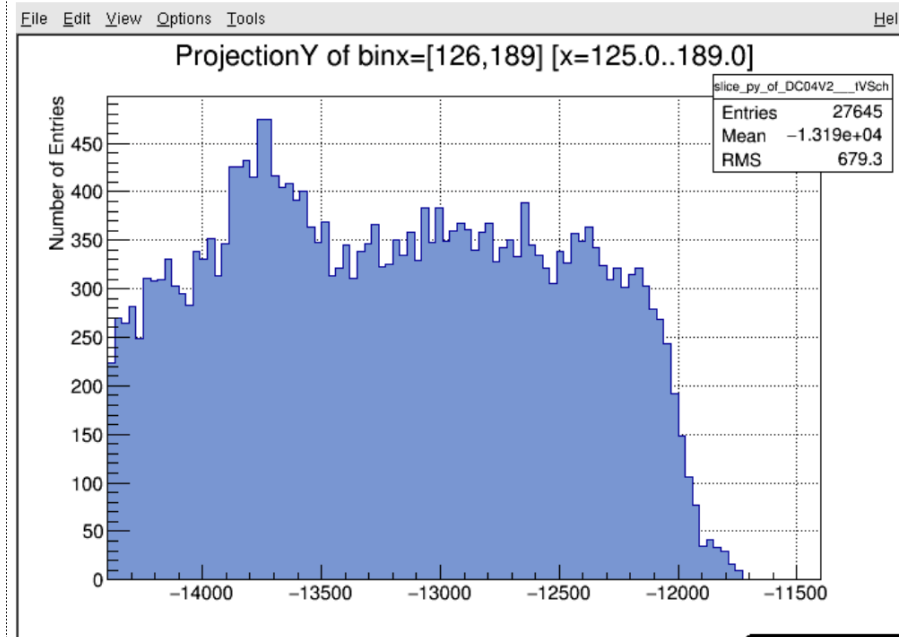
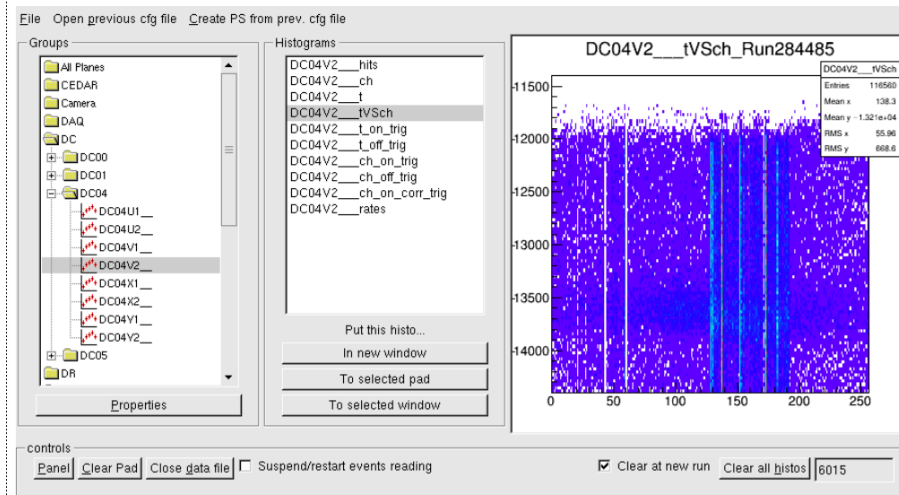
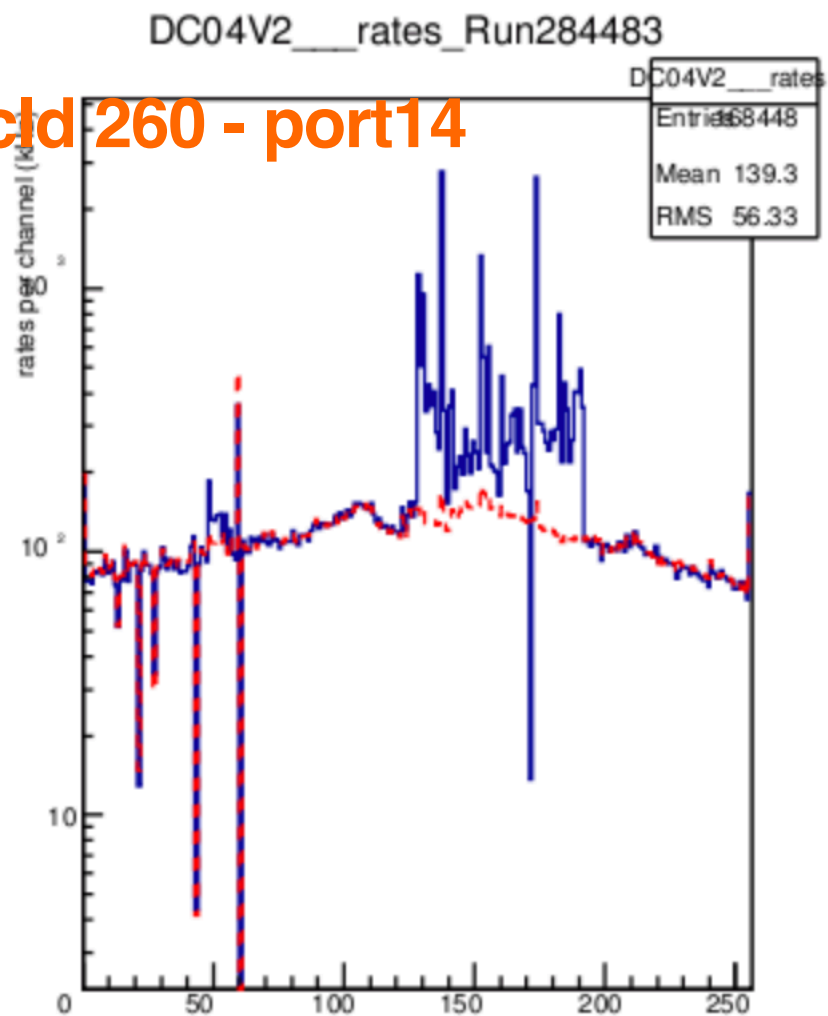
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Detector - DC



# COMPASS 2018

SrcId 260 - port14



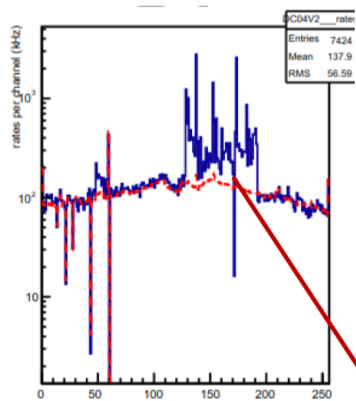
# WEEK 27-28

## Detector - DC



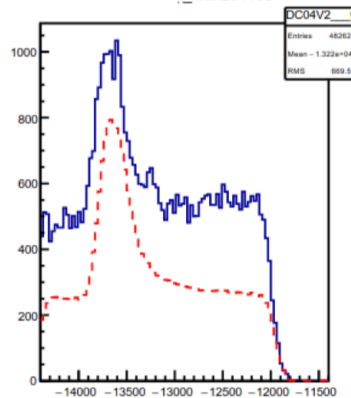
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DC04V2 Rates



Threshold -0.9V One card very noisy

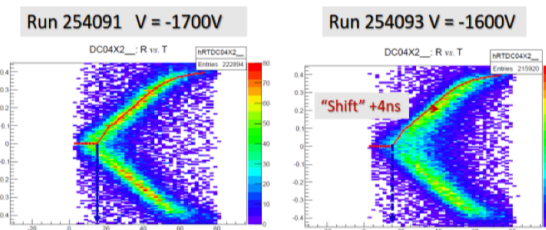
Time



A.Magnon M.Meyer

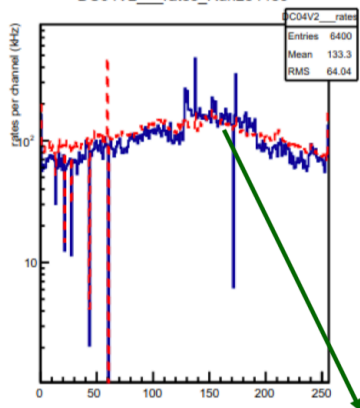
DC04X, "shift" of RT relations vs HV

Saclay DC04  
=> TB 150204



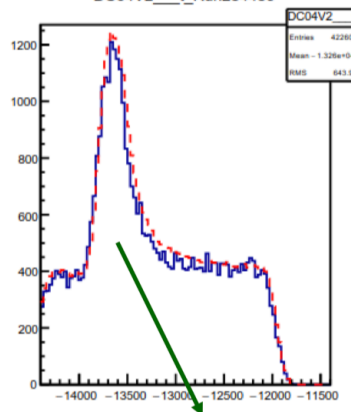
RT "shift" is +4ns for -100V => Gain ÷2

DC04V2\_\_rates\_Run284485



Threshold -1.2V Noise reduced, no reduction for time-correlated evts

DC04V2\_\_t\_Run284485



- Threshold increase from -0.9V to -1.2V corresponds to a Gain drop of ~30% i.e. HV drop of ~30Volts i.e. RT shift (plot above) of 1.2ns
- From cool plot total nb of time-correlated evts looks unchanged (compared to reference, as expected from HV tuning -> 100V above beginning of efficiency\_plateau)
- We propose to set DC04V2 threshold to -1.2V

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Detector - MWPC



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### PA05

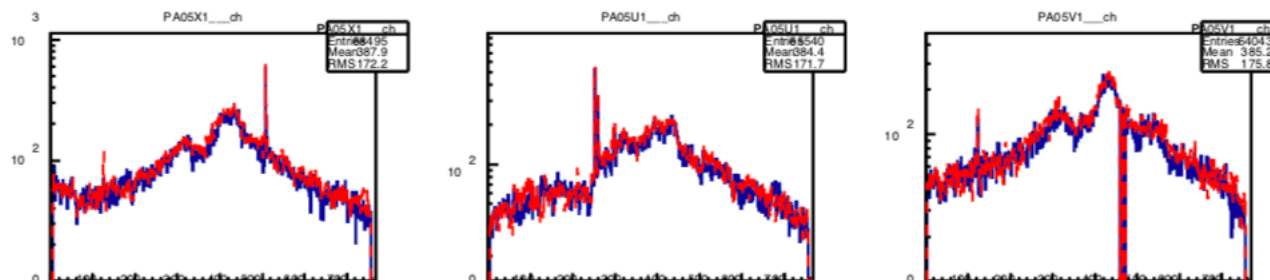
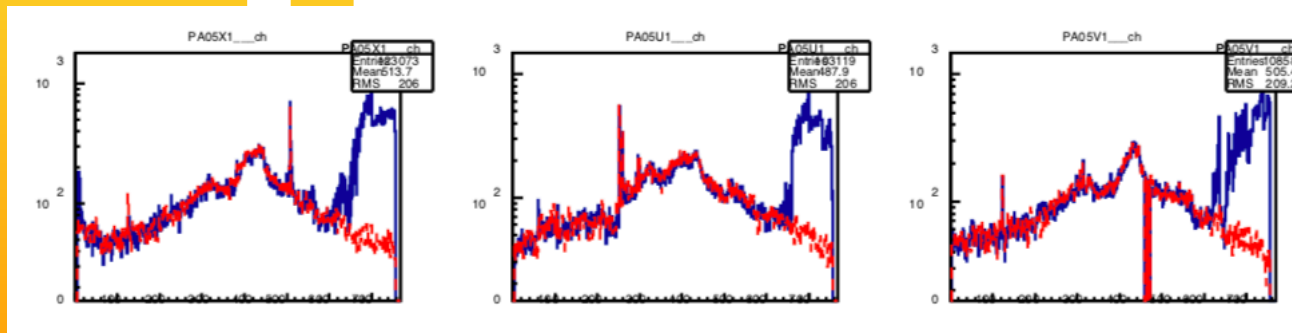
Noisy channels disappeared since one week and appeared again (after MD on Wed 11)

### PA05U Srclid 454 (port7)

Excluded from database on Sunday.  
Recovered during MD (unplug-plug on catch side)

### PS01

Surveyed and slightly adjusted to



# WEEK 27-28

## Detector - W45



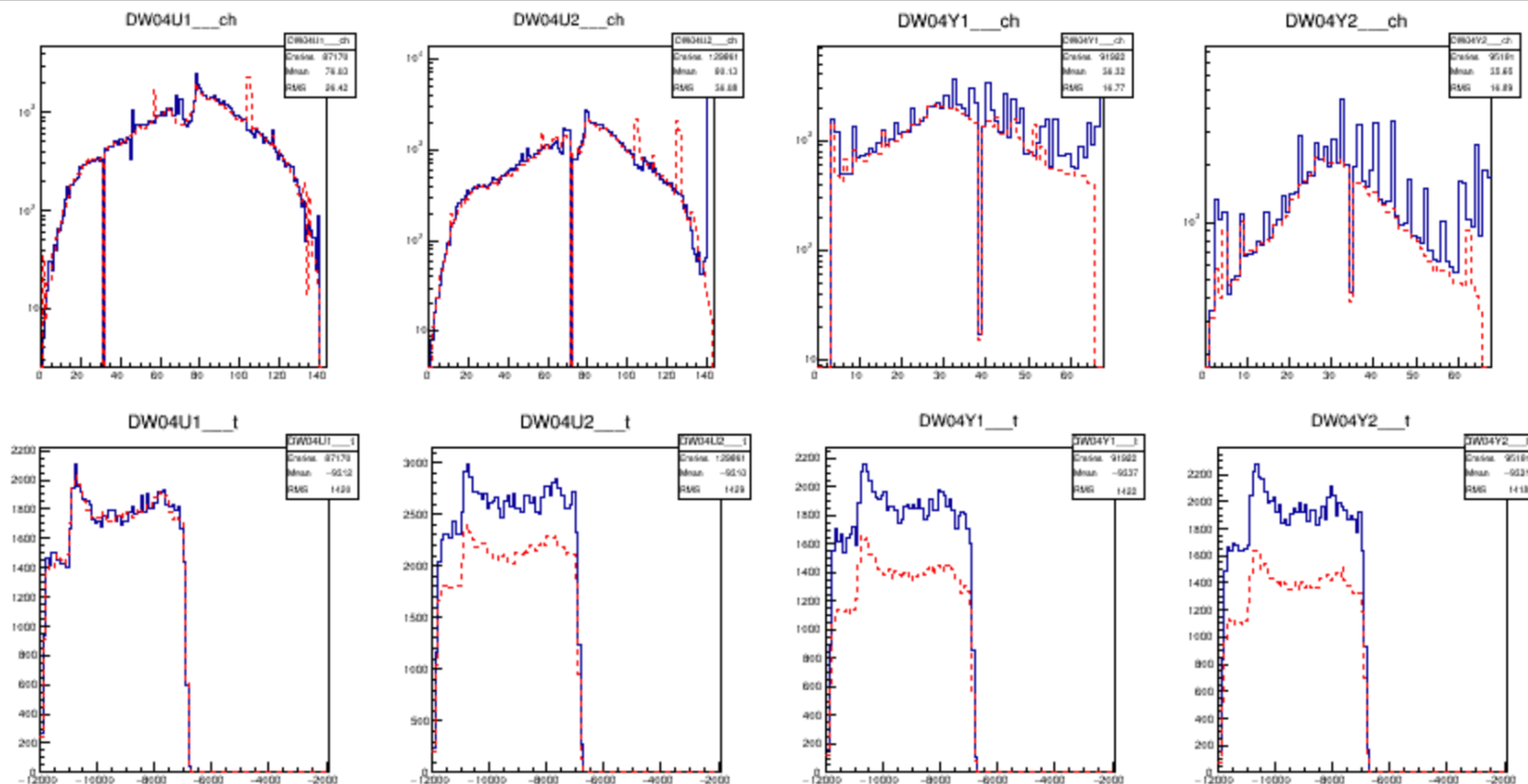
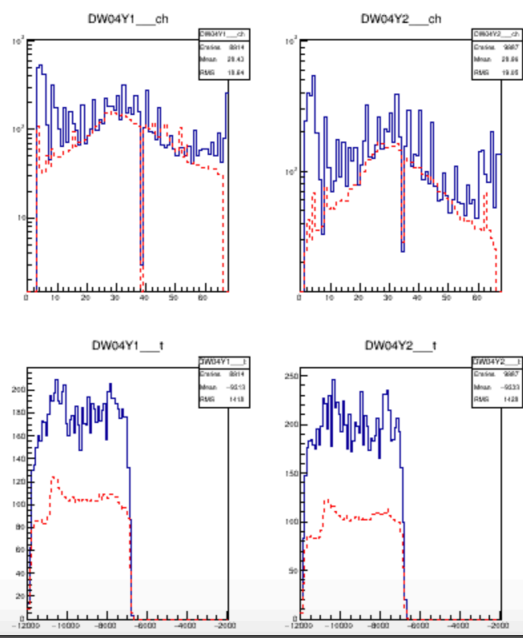
# COMPASS

Others

## 2018

### Noisy planes: DW04 U2 Y1 and Y2 appearing

During the MD yesterday, I tightened the screws of the grounding connections, plugged the LV cables from card #2 on different pins on the black rail to reduce cable tension, exchanged the MAD4 cards #3,1 and #3,3 and put a little extra copper foil on them.



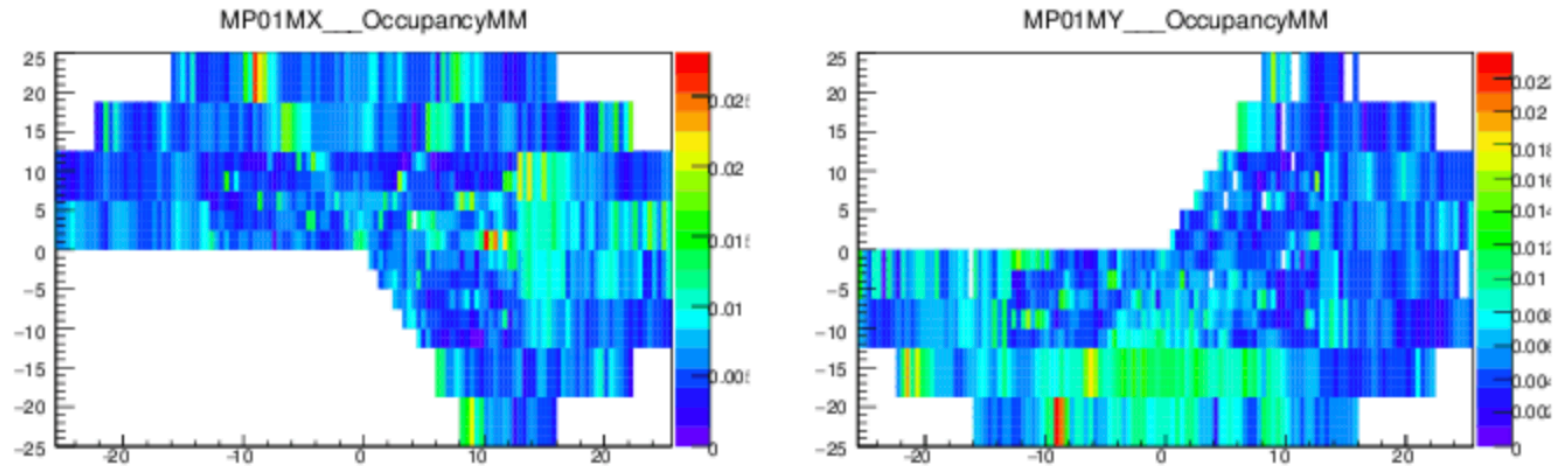
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Detector - PMM



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Run 284493 Canvas\_MP01MX\_\_OccupancyMM: PixelMM\_Occupancies.cfg - Page 4 (2837 evts) Thu Jul 12 20:42:20 2018



Loading of station 380 failed with the following errors: (After powercycling LV)

HGeSiCA(RICH) (380): chip error: 16 failures when setting APV MP03XY1 (ADC 5, chip 0x20)

HGeSiCA(RICH) (380): chip error: 16 failures when setting APV MP03XY1 (ADC 5, chip 0x22)

...

on all APV cards, connected to the same ADC card. Therefore it is most likely an issue with the corresponding ADC card.

This card is connected to the XY views on Jura side. I finally suspected a broken fuse on the mother board, which is supplying the ADC card.

To replace it, the MM station 0 needs to be moved in garage position and the ADC card removed to replace the fuse. By looking at the details of the logs (Thanks to Damien), he confirmed that it was a power supply issue => So most likely a broken fuse

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Detector



COMPASS  
Others  
2018

### ECAL0

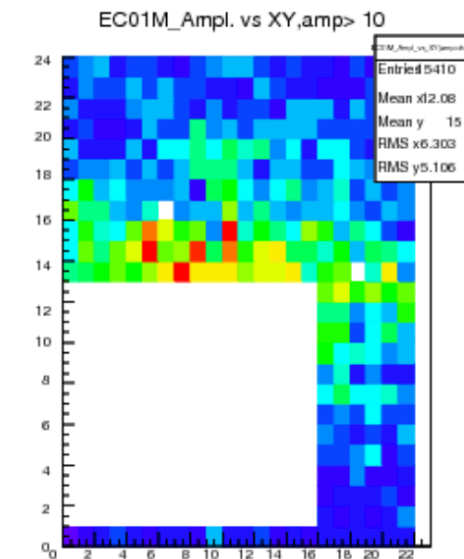
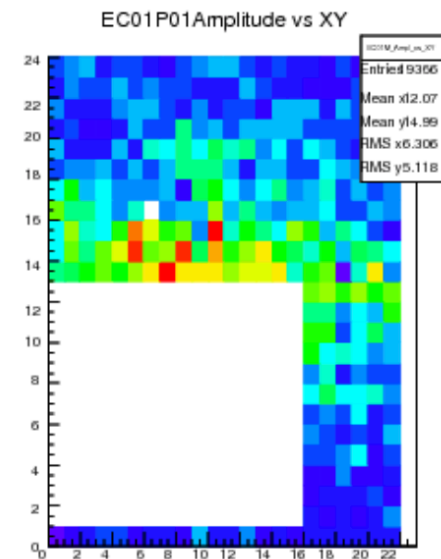
ECAL srcID627 100% errors in MurphyTV since Wednesday midnight, need powercycling in the 888 in case there is no beam for about 1 hour

**!Note: We disabled 627 for now in the Link status window to get rid of the red lines in the message browser.**

### Rebooted pccofes tonight

- pccofe08 (DC) -> not reachable, powercycled from DCS,
  - pccofe13 (DC,Straw) -> not reachable, powercycled from DCS, took a couple minutes but it's finally okay now
- Only error left now in check\_daq
- pccofe37 (BMS - this one is expected)

Reloaded everything on pccofe08 and pccofe13 once, except for Straw srcID 324, which we reloaded many many times until it worked again.



**WEEK 27-28**

**Men of the week...**



**COMPASS**  
2018

**...French Men of the week...**

**11 July 2018 - COMPASS (CERN - France)**



**10 July 2018 - SAN PETERSBURG (RUS)**



**MANY THANKS TO THE SHIFTERS, THE EXPERTS!  
Many thanks to Christophe and Vincent!!**

**Good luck to Riccardo for next week!**