Analyse of CERN data

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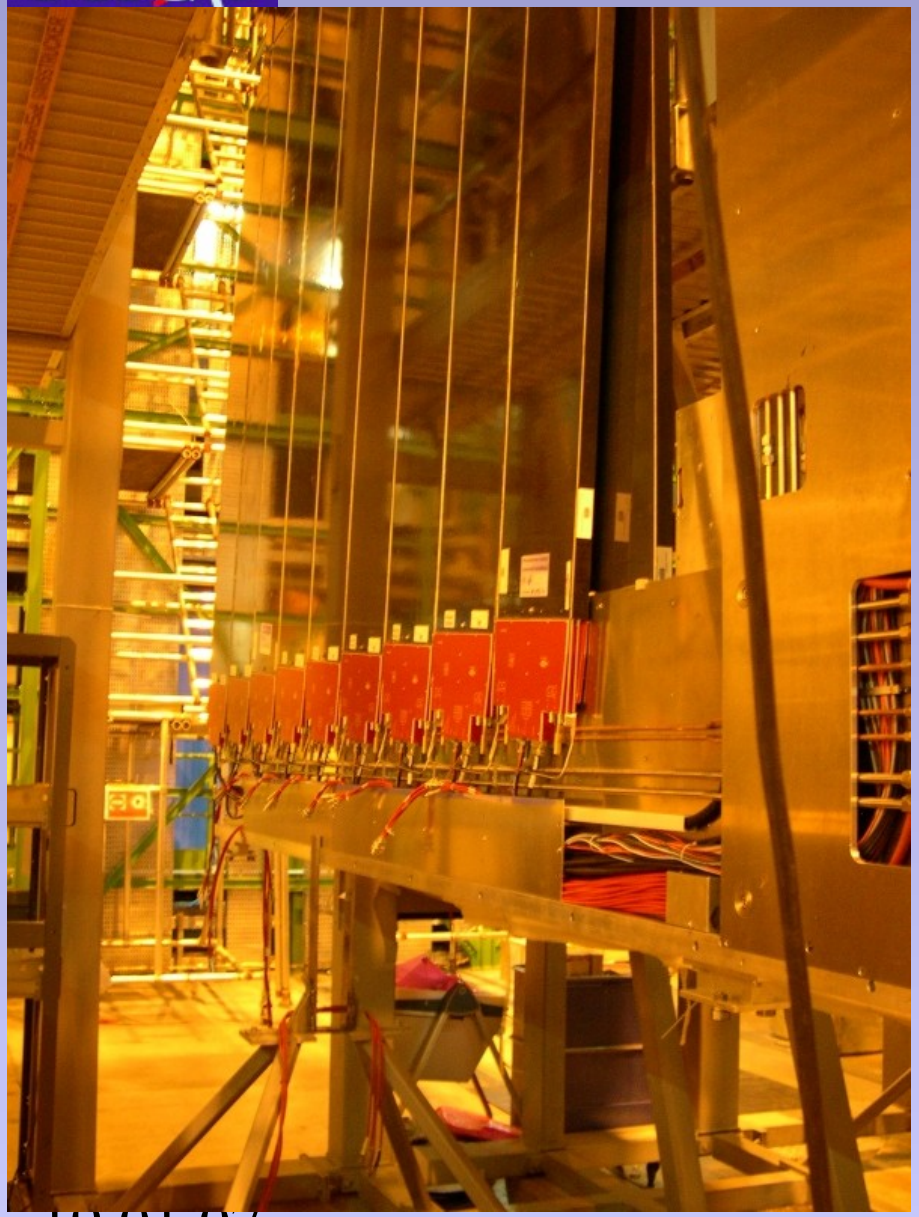
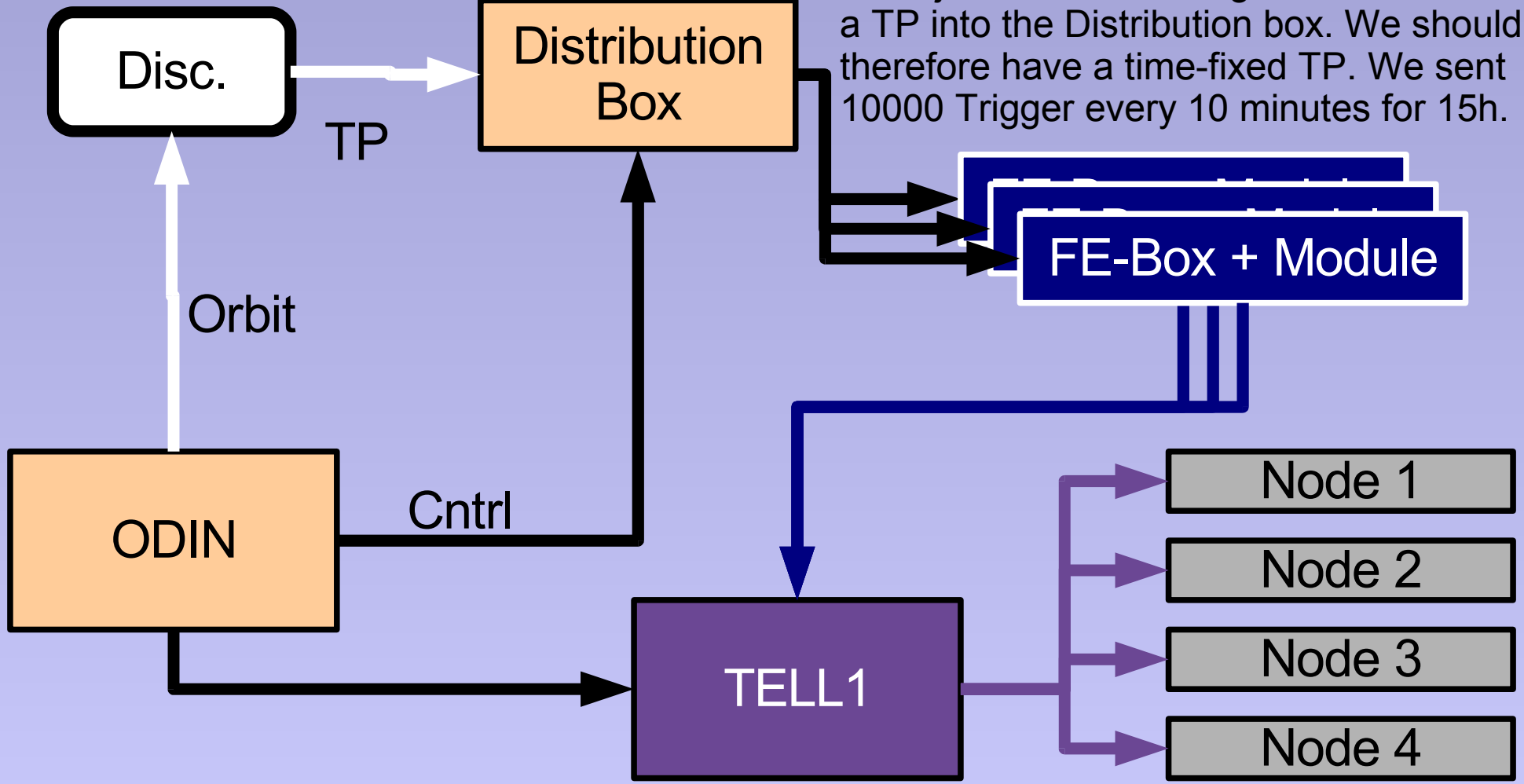


- 2 Layer:
  - T3 Q1 U c11
  - T3 Q1 X
- Electronic used
  - 18 FE-Boxes
  - 1 Distribution Box
  - 1 TELL1

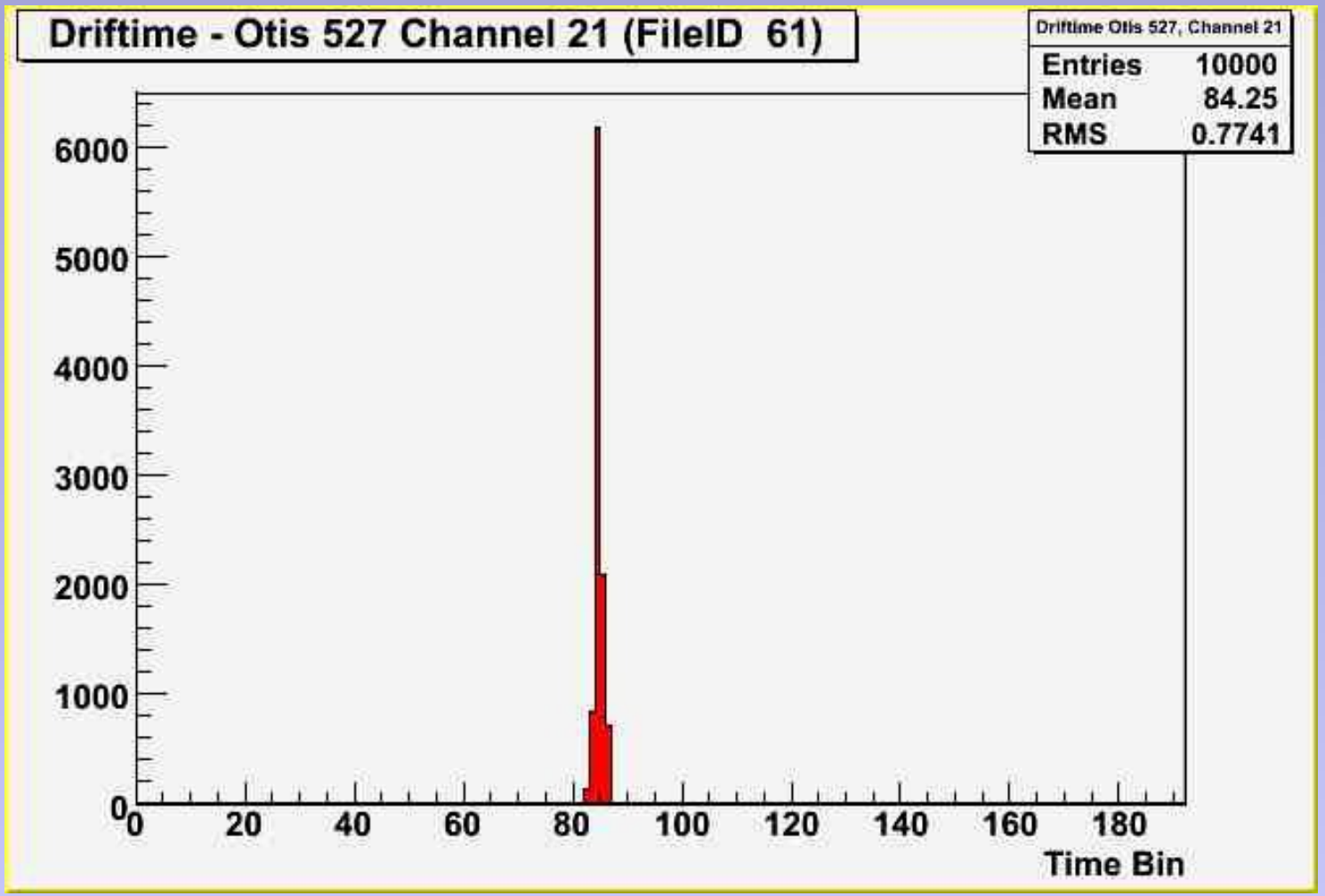
Longterm measurement

We injected the Orbit signal of the ODIN as a TP into the Distribution box. We should therefore have a time-fixed TP. We sent 10000 Trigger every 10 minutes for 15h.



Longterm measurement – Analyse (I)

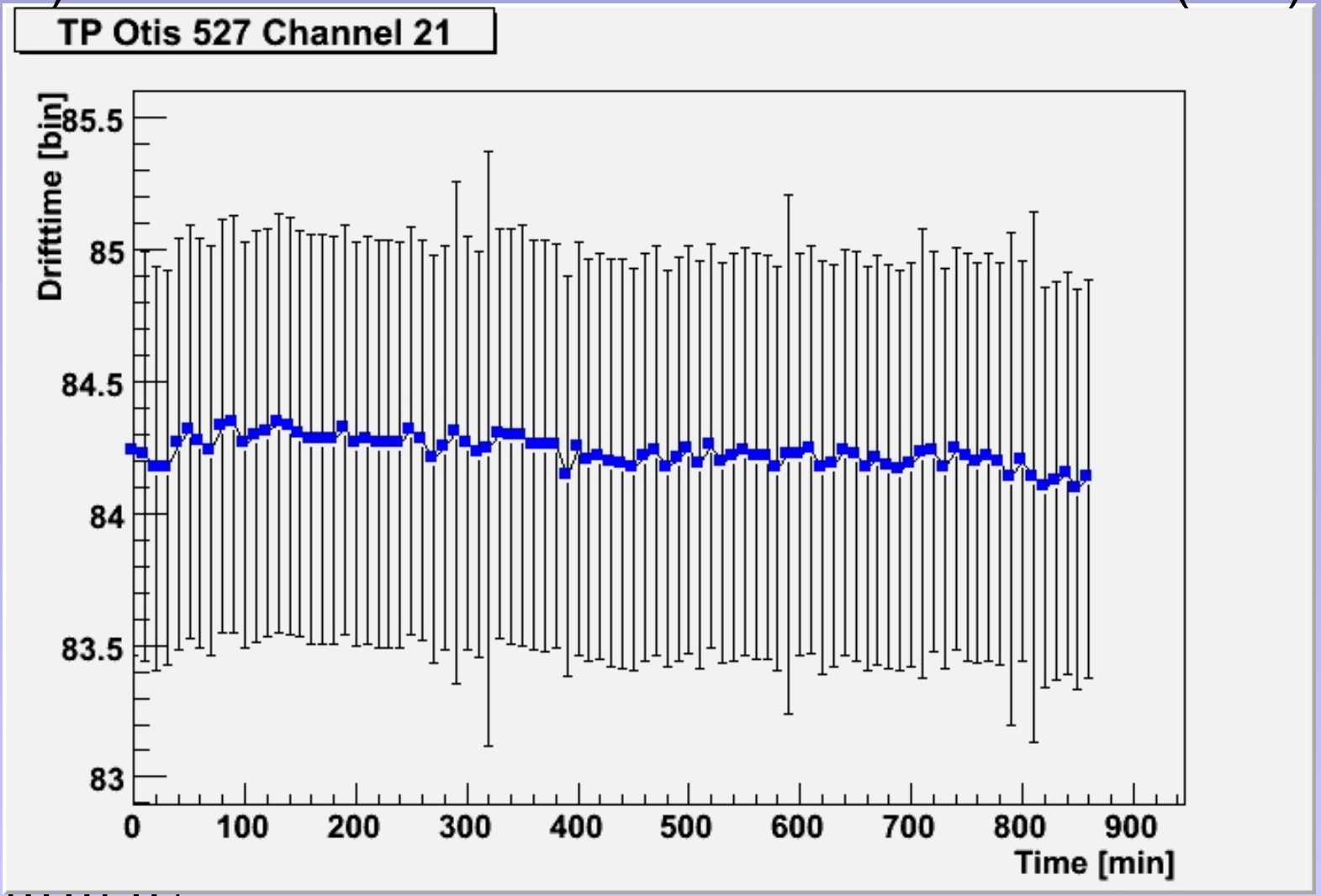
1) Plot the drifttime per Otis,channel,file



2) Take the mean value and the RMS if the histogram has more than 5000 entries.

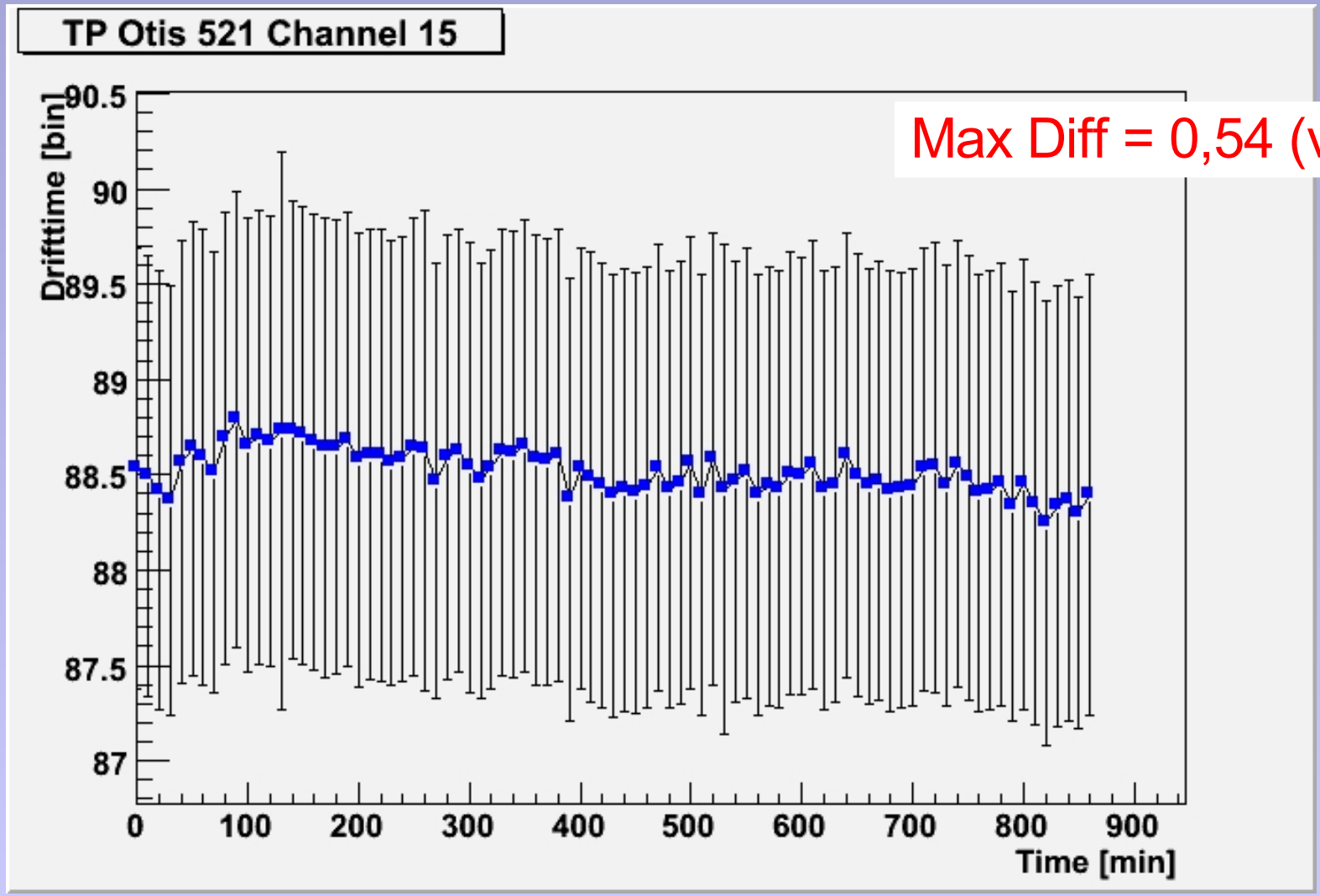
Longterm measurement – Analyse (II)

3) Store the mean and rms as a function of time (files).



Longterm measurement – Analyse (III)

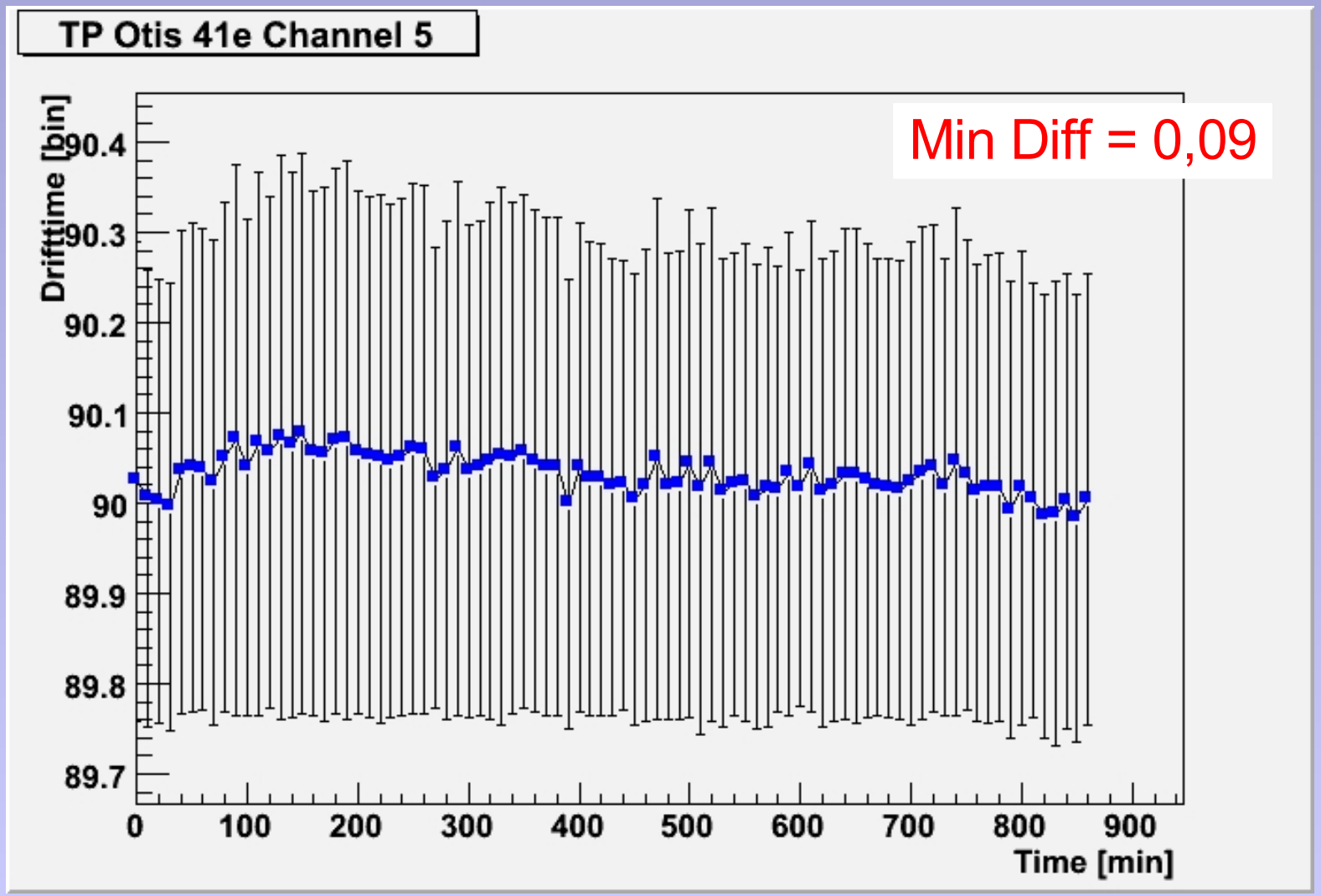
4) Find the one with maximun difference between two mean values



Max Diff = 0,54 (very small !!)

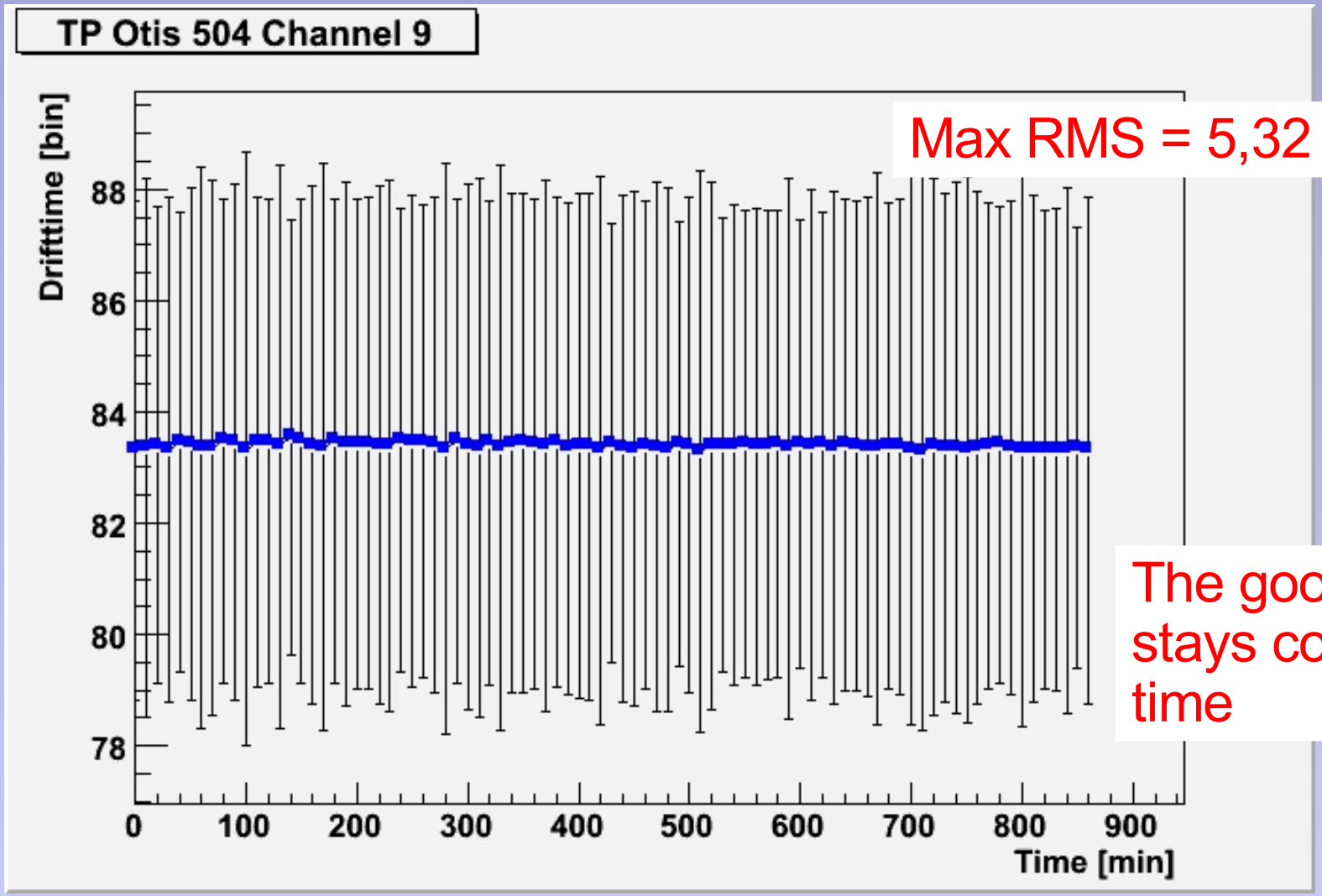
Longterm measurement – Analyse (IV)

5) Just for fun, the minimum difference between two mean values



Longterm measurement – Analyse (V)

6) Now RMS or how sharp is the peak. Biggest rms value is:

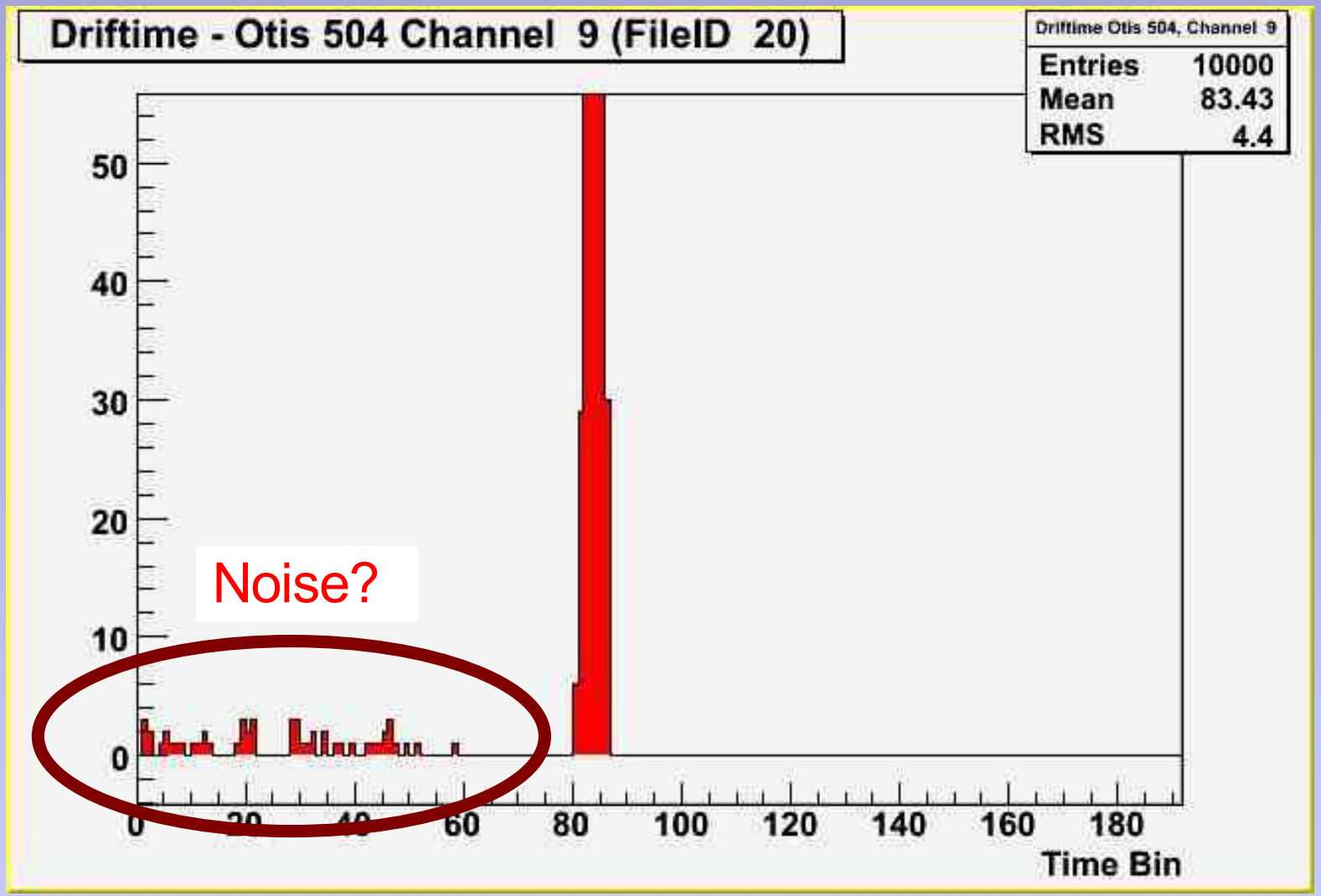


Max RMS = 5,32

The good thing: it stays constant with time

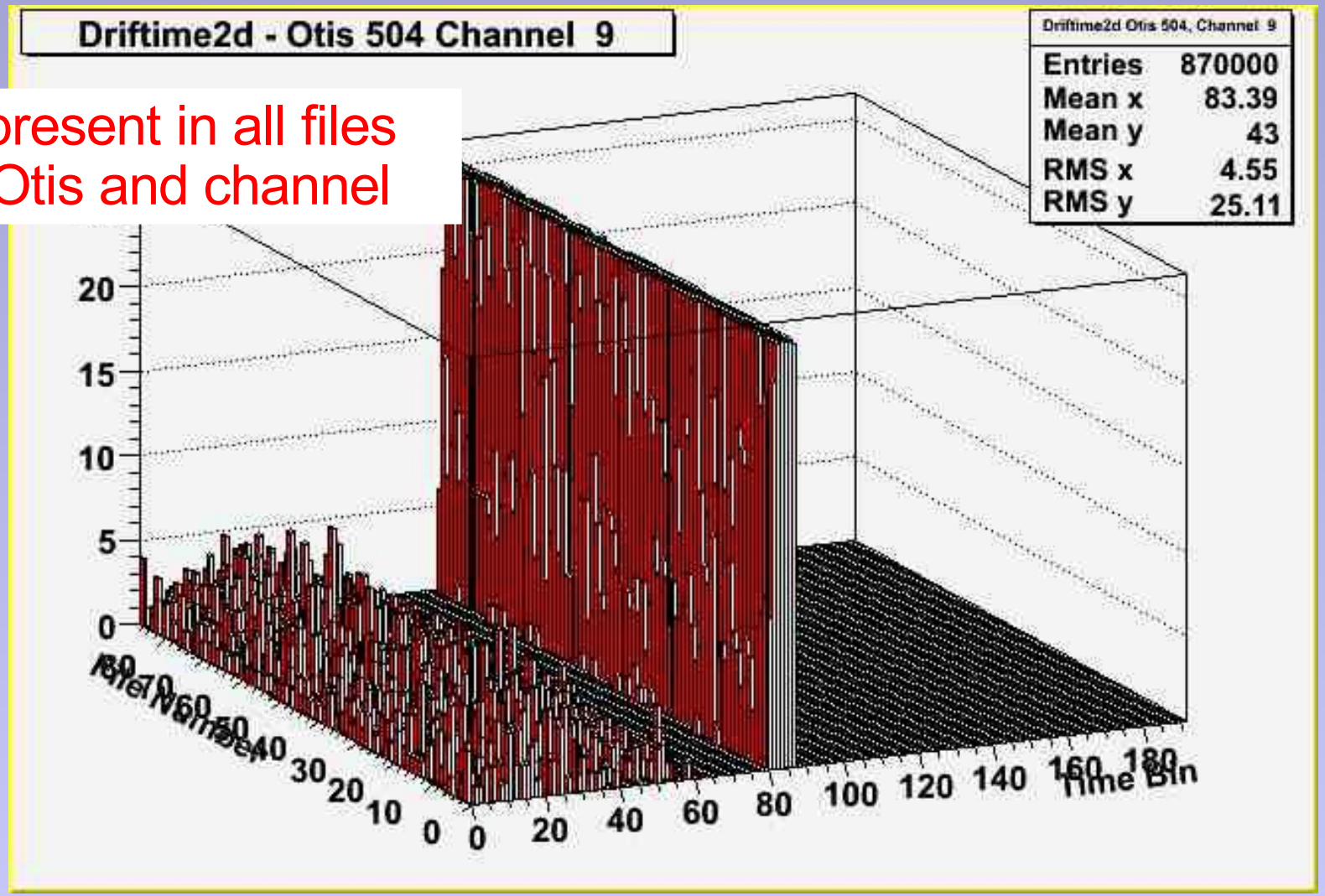
Longterm measurement – Analyse (VI)

7) Why is RMS so big?:



Longterm measurement – Analyse (VI)

This is present in all files for this Otis and channel



Longterm measurement – Analyse (VII)

- Summery:
  - All Otis respond to a Trigger
  - TP stays stable
  - Excluded from Analyse due to too few entries:
    - Otis 40f, channel 31 (FE-Box 0050)
    - Otis 424, all channel (FE-Box 0041)
    - Otis 426, all channel (FE-Box 0041)
    - Otis 517, all channel (FE-Box 0004)

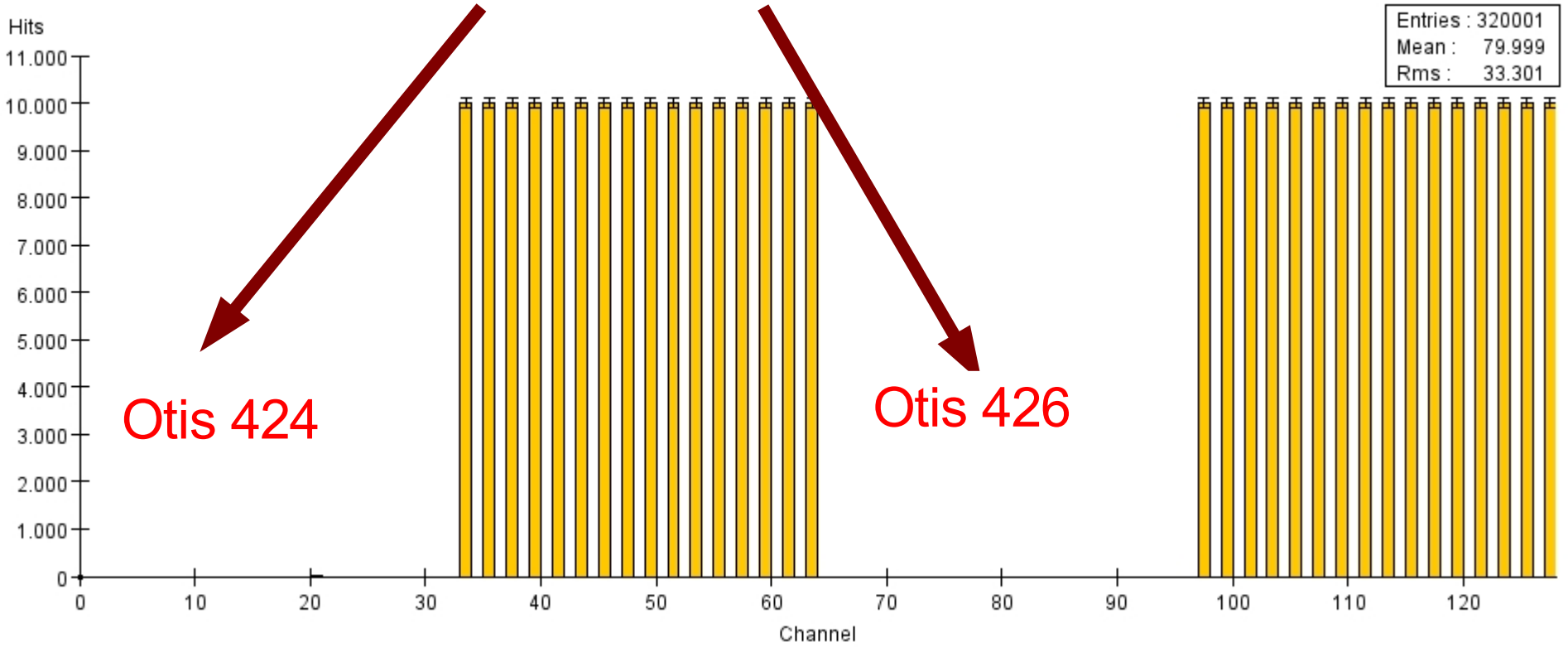
Other stuff checked

- GoI on/off
- 2,5 V on/off
- External TP
- Clock switch between intern and extern
- TP
- Clock delay (from Online Histograms)
- I²C
- Fast controll
- Voltage measurement with some problems in PVSS

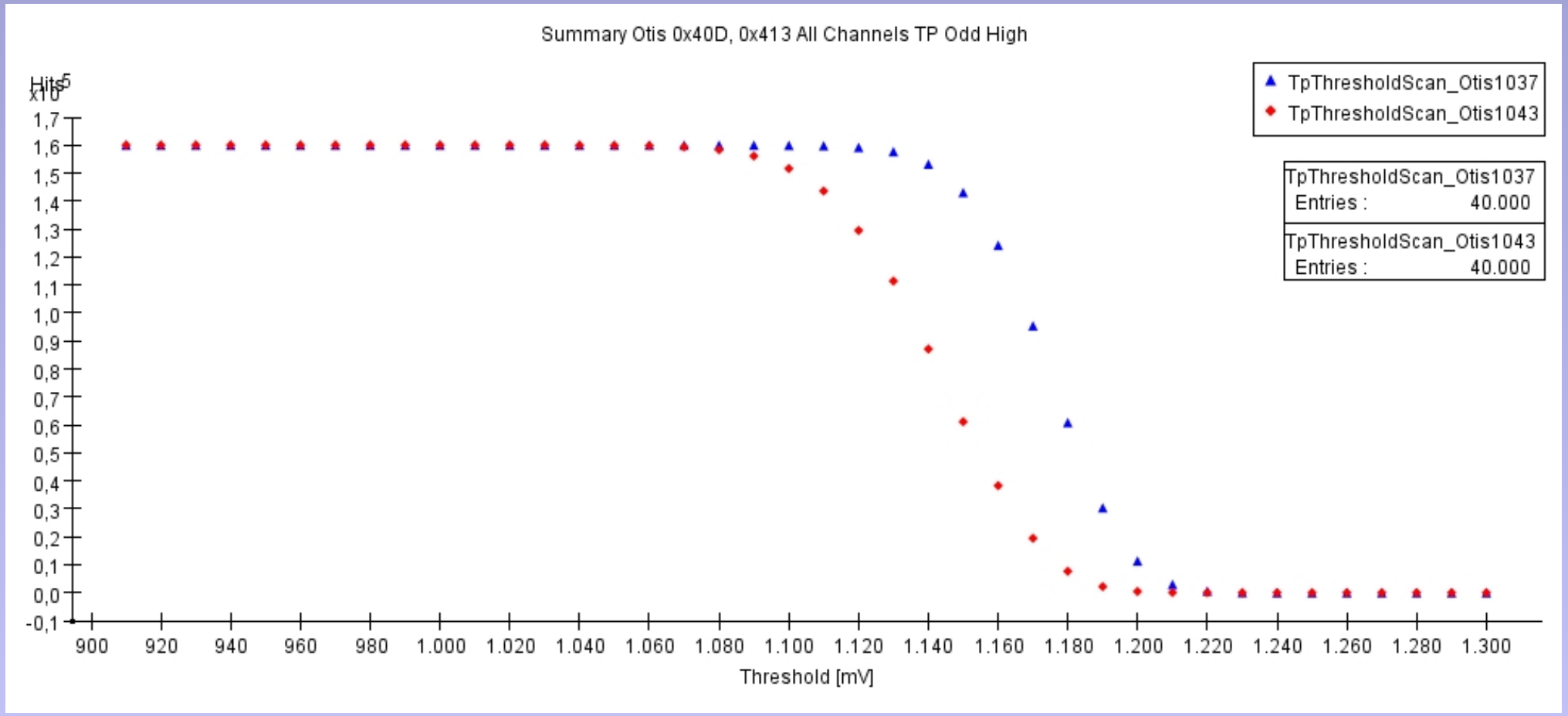
Longterm measurement – Analyse (VIII)

Reason for exclusion:

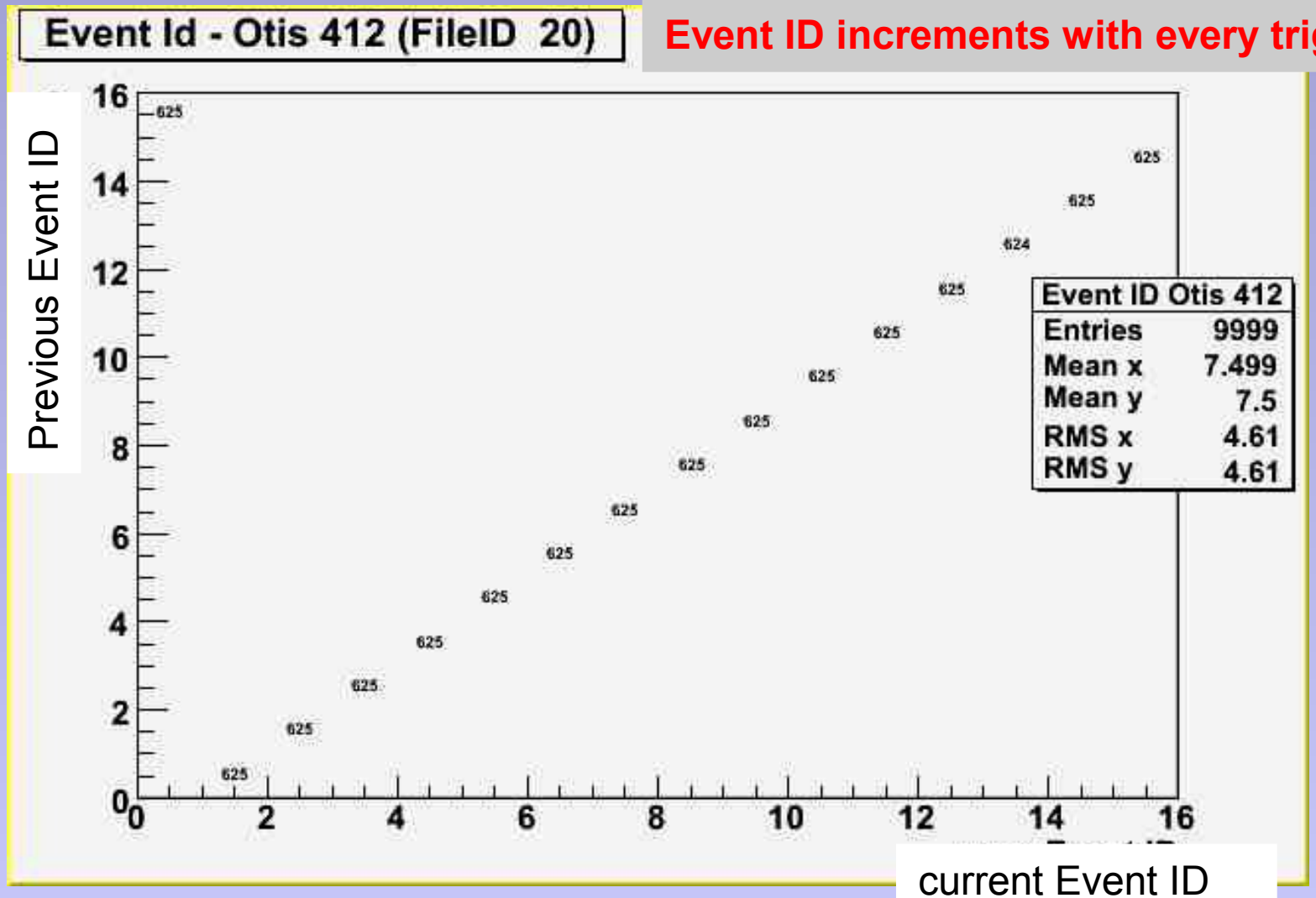
No TP seen (but they see the noise in other measurements)



Thresholdscan TP



Other stuff – Event ID (I)



Event ID increments with every trigger

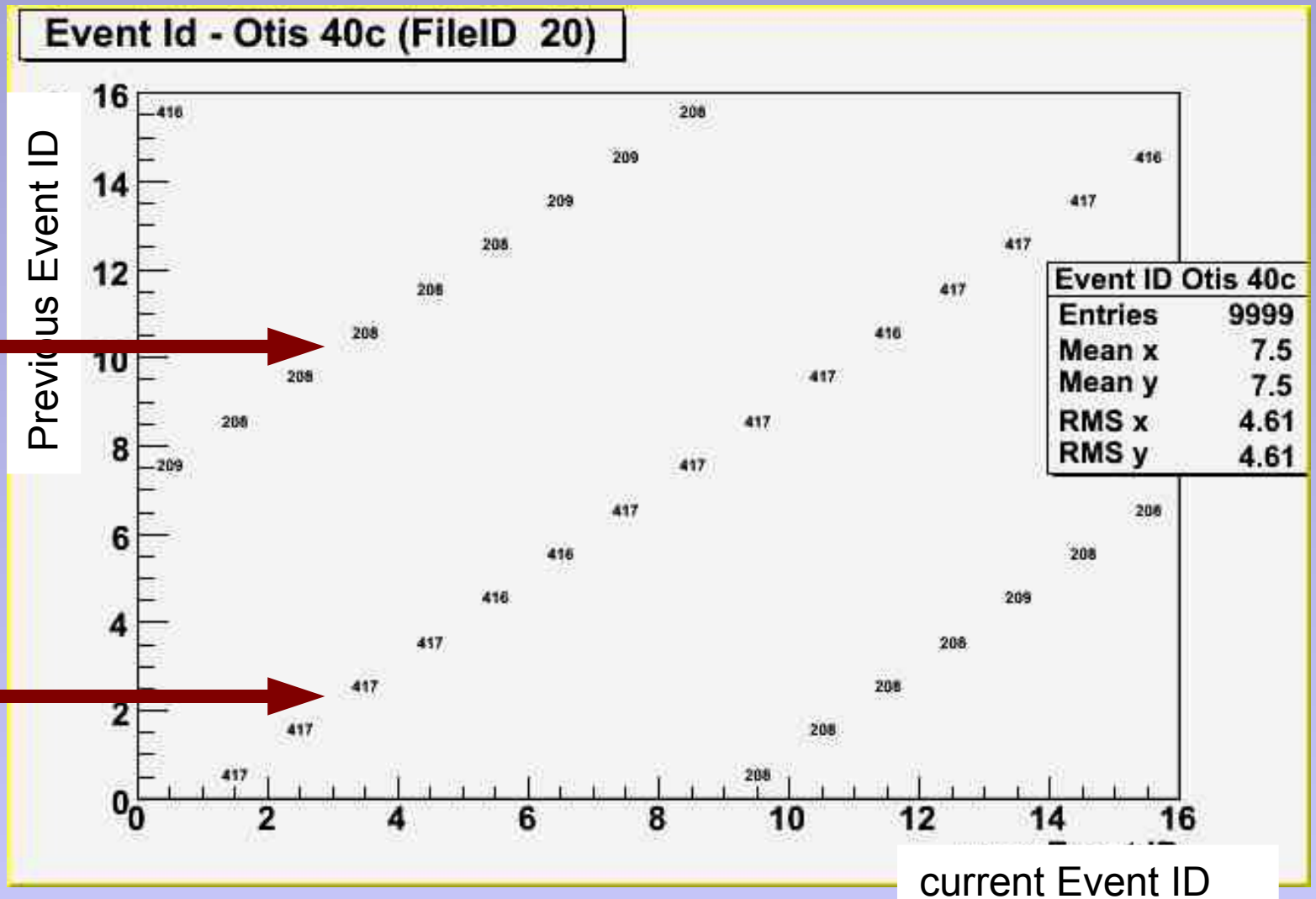
Other stuff – Event ID (II)

But not for Otis:
- **Otis 40c- 40f**
- **Otis 424- 427**

Bit stuck?

208

417



Other stuff – BX id

- After each Orbit, we send a BX reset, so everytime the BX value in the Otis Header should be the same (48 in our case)
- Exceptions:
  - Otis 410 has deviations in 7x – 14x the cases in all files.
  - Otis 413 has deviations in 0x – 4x the cases in all files.
  - This is still under investigation