

TriDAS

status and next steps

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KM3 - SC Meeting - LNS 17/07/2013

Present Status @ Portopalo

Few *routine* interventions,
all solved remotely at the phone

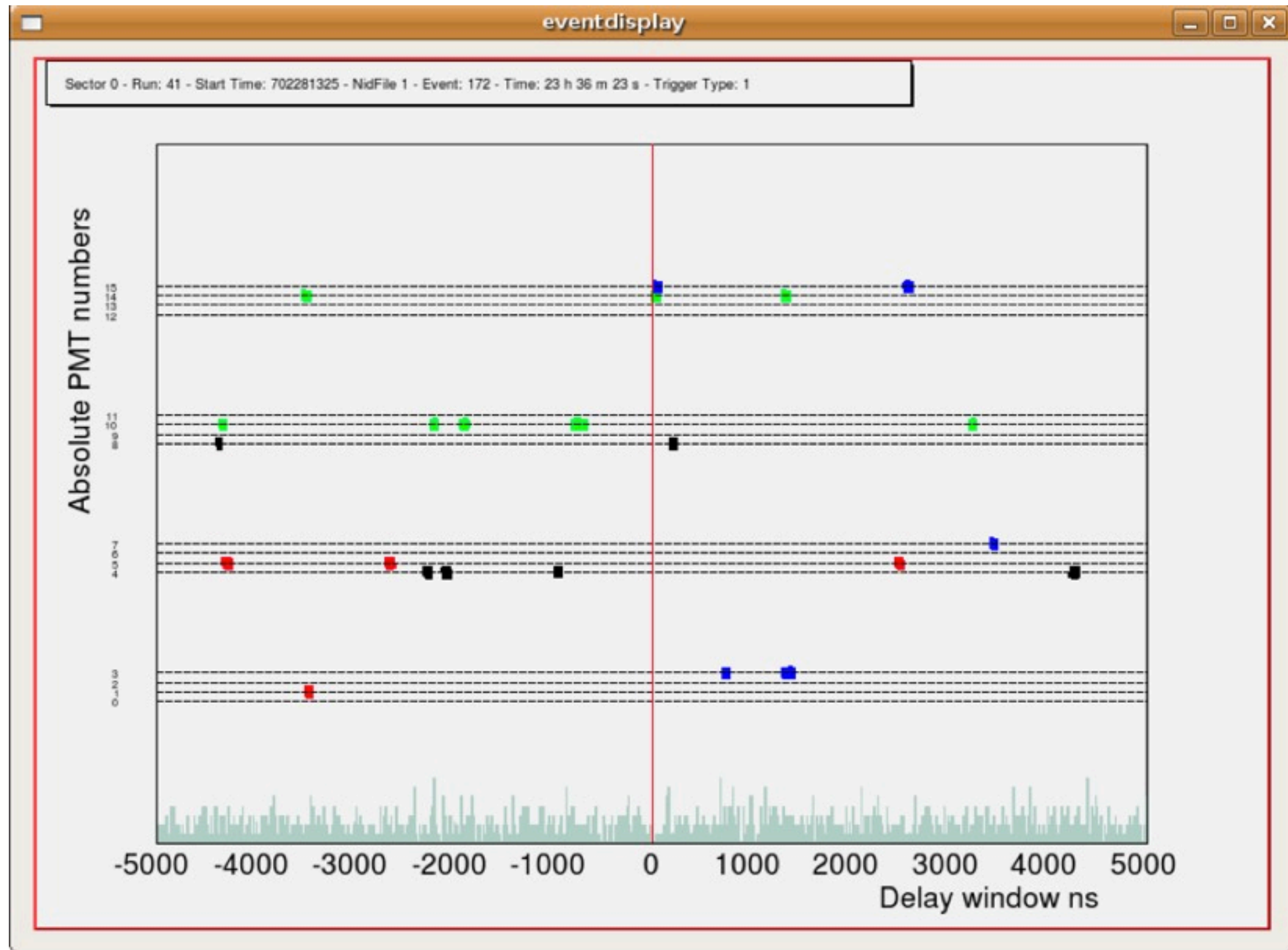
Main *debug* investigations:

- occasional TriDAS crash (1/day):
suspected delayed transmission to the
HitManager (work in prog. with F. Simeone)

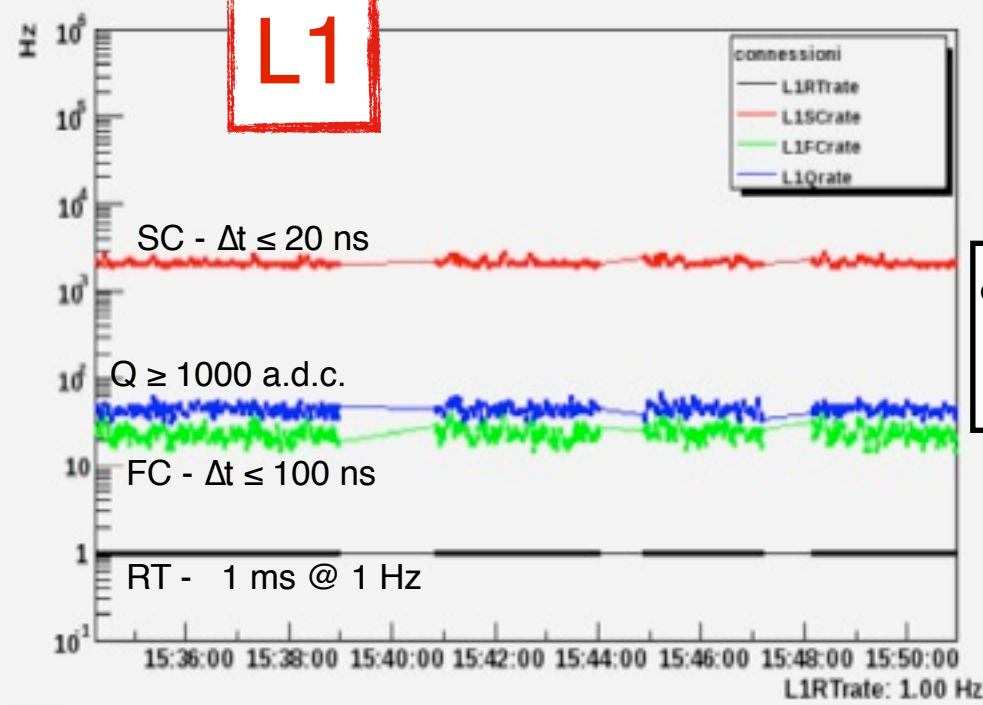
Some updates:

- TriDAS GUI
- Monitoring Environment (using also PC mon2)

Finalizing Development of Event Display (a-la-Phase I)

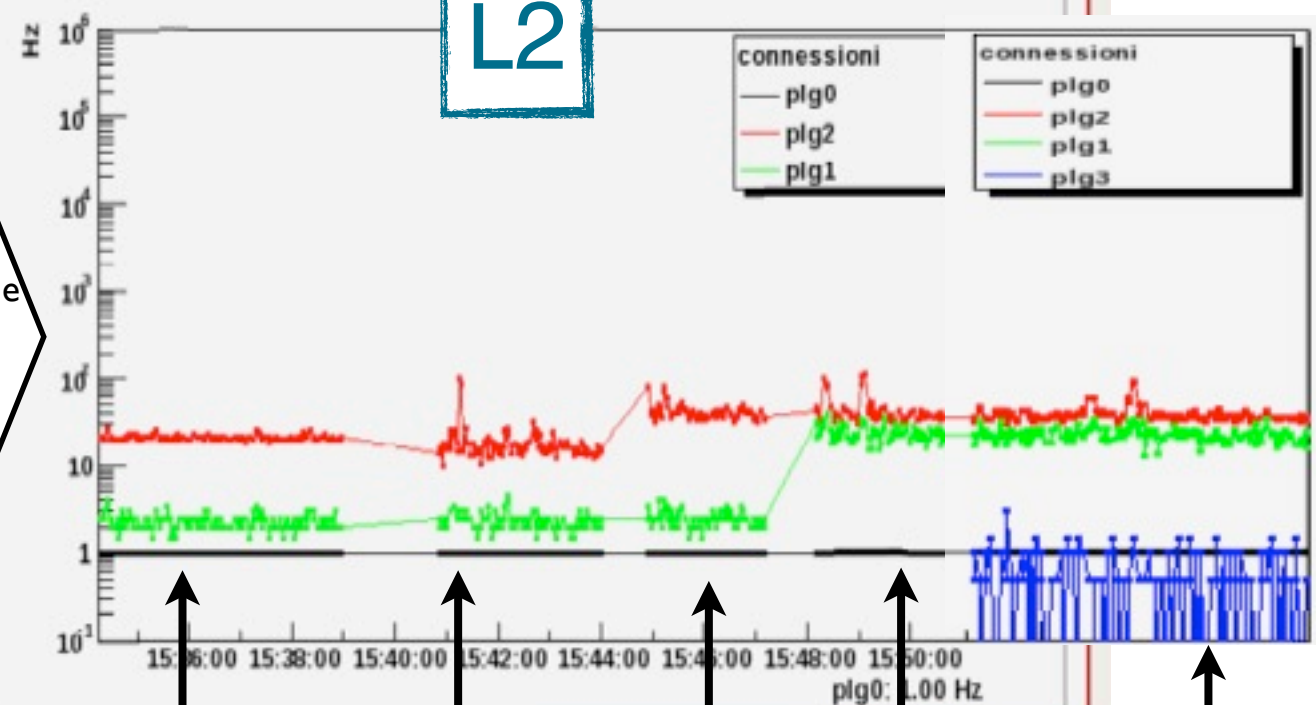


L1



downscale
with
plugins

L2



Trigger test/ changes

(A)

SC - 1:100
 FC - 1:10
 Q - no
 RT - 1:1

(B)

SC - only if $\# \geq 2$
 FC - 1:10
 Q - no
 RT - 1:1

(C)

SC - 1:100
 or all if $\# \geq 2$
 FC - 1:10
 Q - no
 RT - 1:1

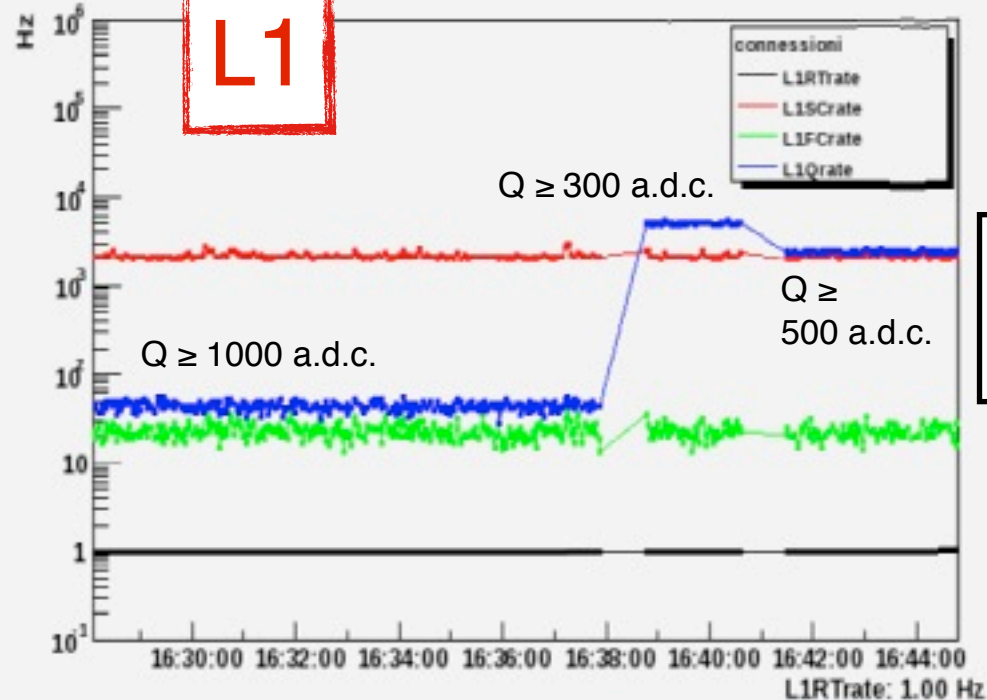
(D)

SC - 1:100
 or if $\# \geq 2$
 FC - 1:1
 Q - no
 RT - 1:1

(E)

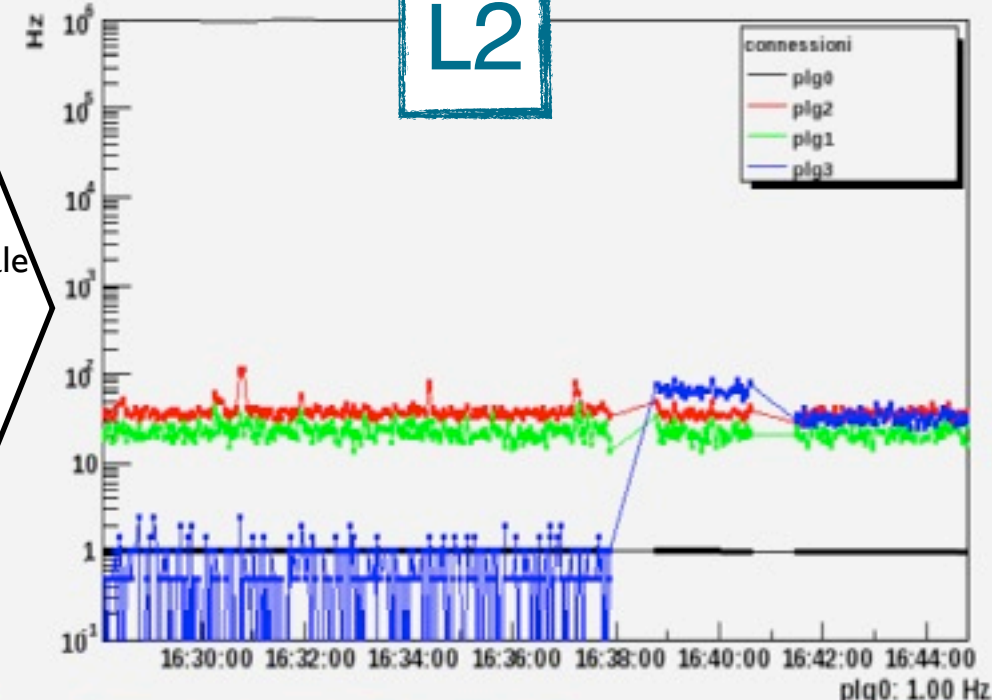
SC - 1:100
 or if $\# \geq 2$
 FC - 1:1
 Q & SC
 (if on different
 PMTs)
 RT - 1:1

L1



downscale
with
plugins

L2



Decision to take

- Do you agree to keep this configuration?
- My feeling is that a study of FEM readout output v.s. n p.e. is mandatory (see further slides)

both for online(**compressed**)/offline (decompressed) purposes!

Proposal from Bo - MC study (Sig. + Bkg) w.i.progress

Devel. of new L2 plugin

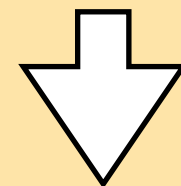
1) Preselection on

- L1 seeds
- n. hits
- charge cuts (*)

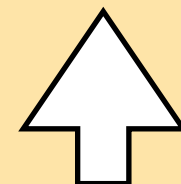
2) Time Combination + causality

T_i = average time of the sub-sector

$$T1 < T2 < T3 < T4$$



$$T1 > T2 > T3 > T4$$



Proposal from **Pisa**. - MC study (Sig. + Bkg) w.i.progress (B. BouhadeF et al.)



Trigger Assumptions and Cuts

After having 8 hits we have study the following possible cuts:

SC (1-2, 3-4) with Time windows 50 ns .

SC (2-3) with Time windows 80 ns .

FC with Time windows 200ns.

light changes in L1

Values under revision

1- Cut_1 : $t_8 - t_1 < TW = 1400$

2- Cut_2 : Cut_1 & NumSC > 0 (1-2,1-3,2-3,4-3, 4-2) (**1-3, 2-4**)

3- Cut_3 : Cut_1 & NumFC > 0

4- Cut_4 : Cut_1 & NumSC > 0 & NumFC > 0

5- Cut_5 : Cut_1 & ((NumSC > 0 & NumFC > 0) || NumSC > 1 || NumFC > 1))

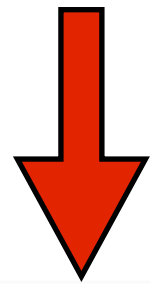
6- Cut_6 : Cut_1 & (NumSC > 0 || NumFC > 0))

**Devel. a new
L2 - plugin**

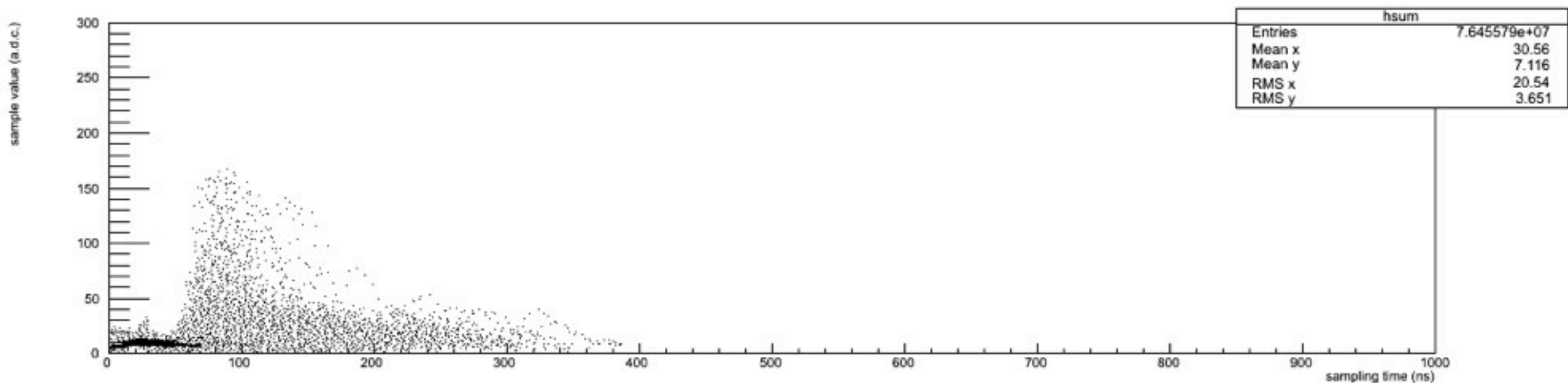
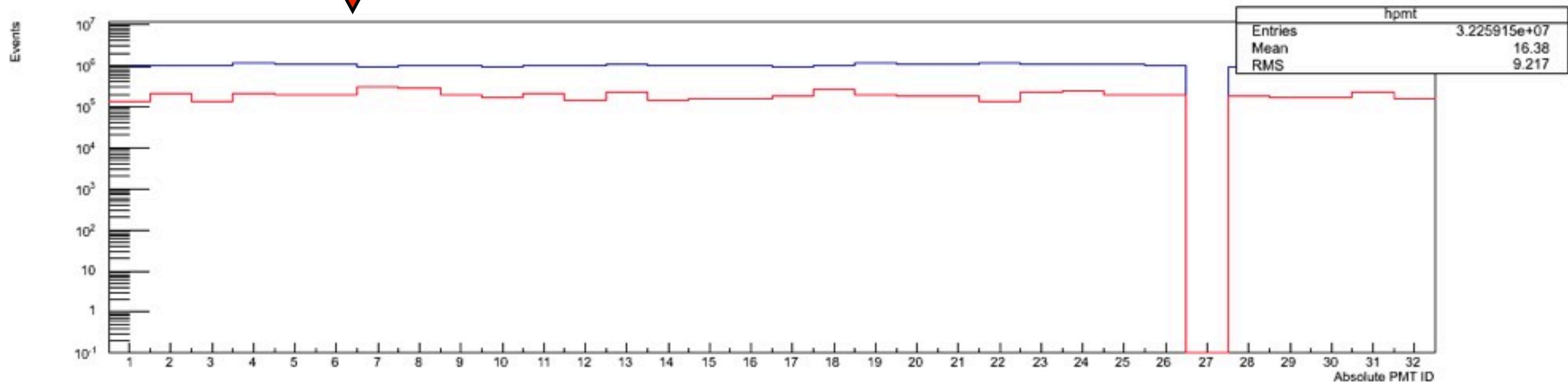
Fundamental information
for using **still-compressed** charge
in TriDAS :

**How much is the a.d.c. size
for the first 10 samples of n p.e. ?**

R86 IF0
std DAQ

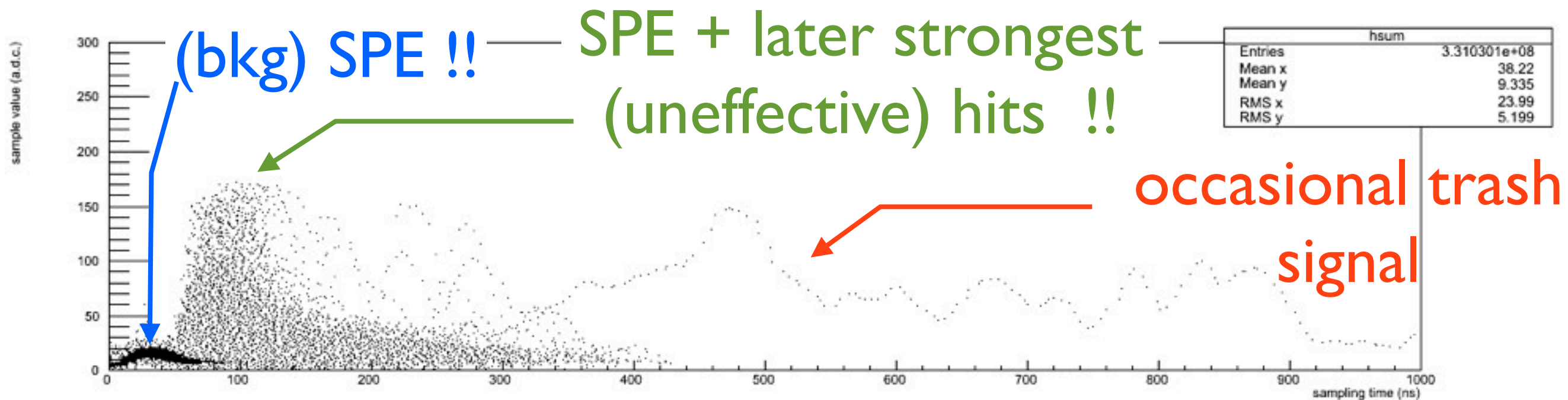
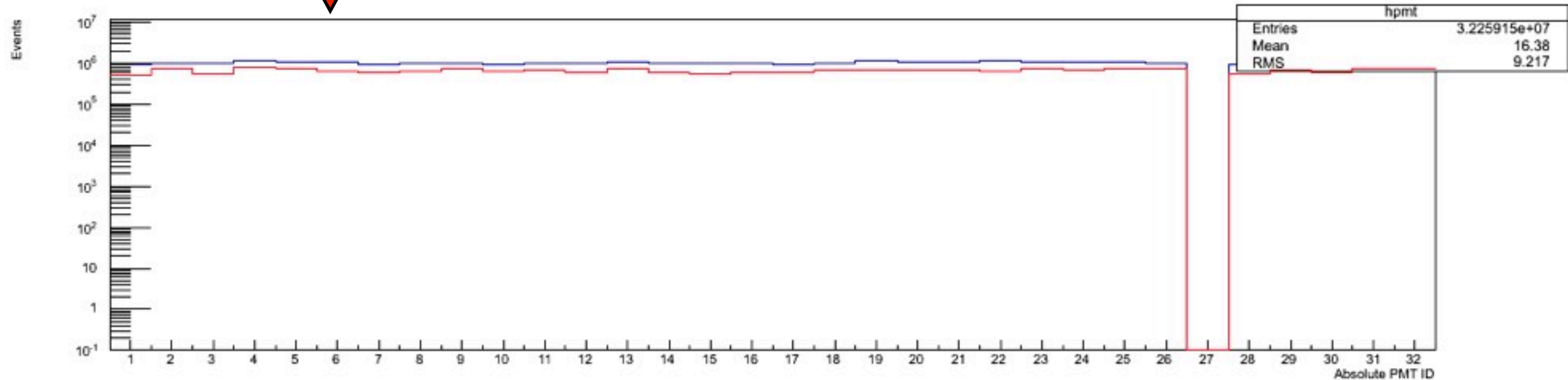
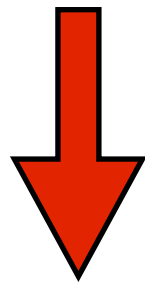


Software used (read_ptfile_evdisp) on the Wiki
(http://wiki.infn.it/cn/csn2/km3/analysis_tools/parsingptfiles)



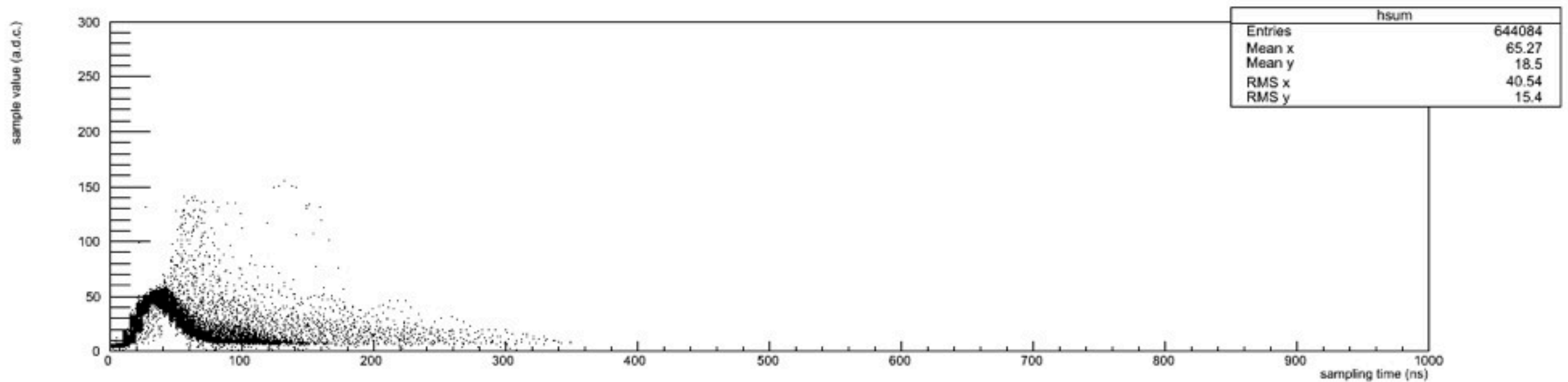
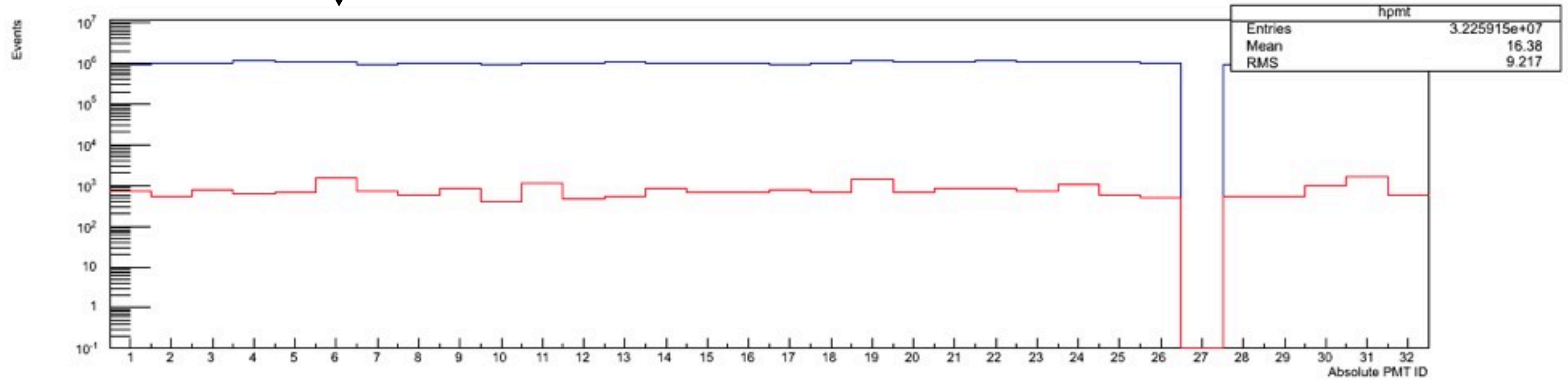
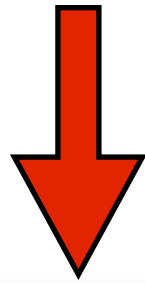
$$50 \leq Q_{10\text{smp}} (= \sum_{i=1}^{10} q_i) \leq 100$$

R86 IF0
std DAQ



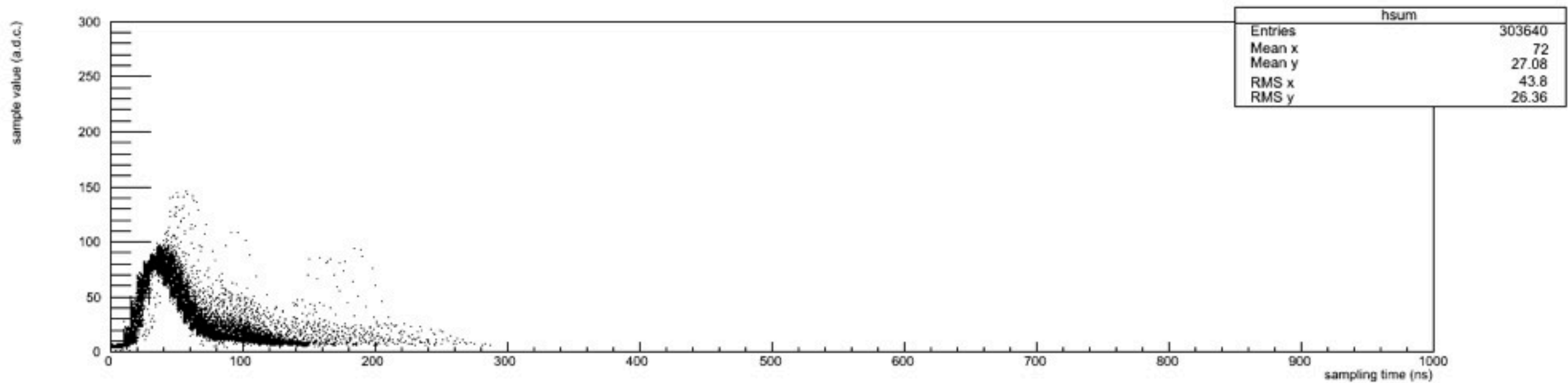
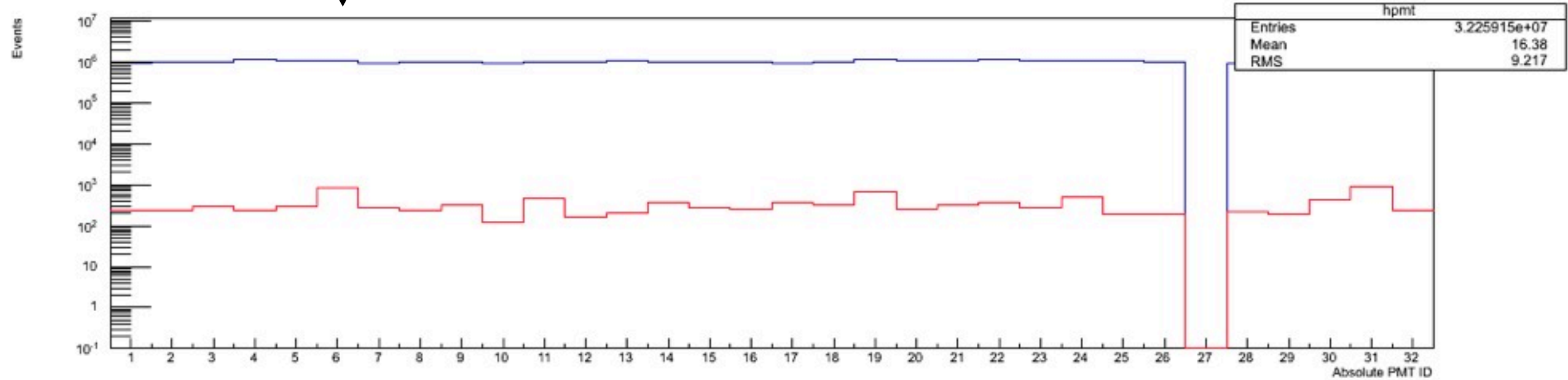
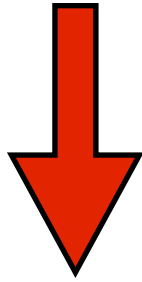
$$100 \leq Q_{10\text{smpl}} (= \sum_{i=1}^{10} q_i) \leq 150$$

R86IF0
std DAQ



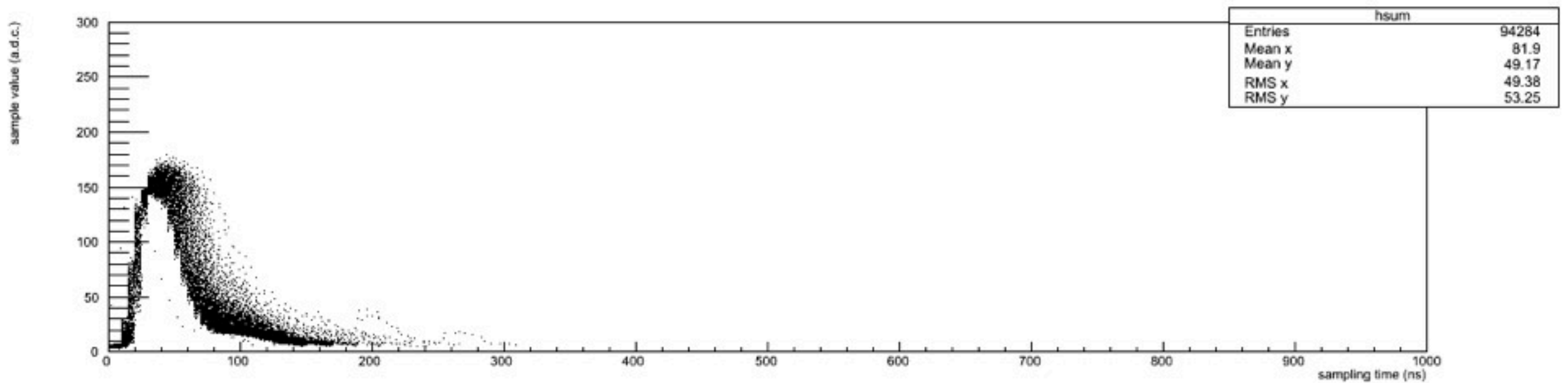
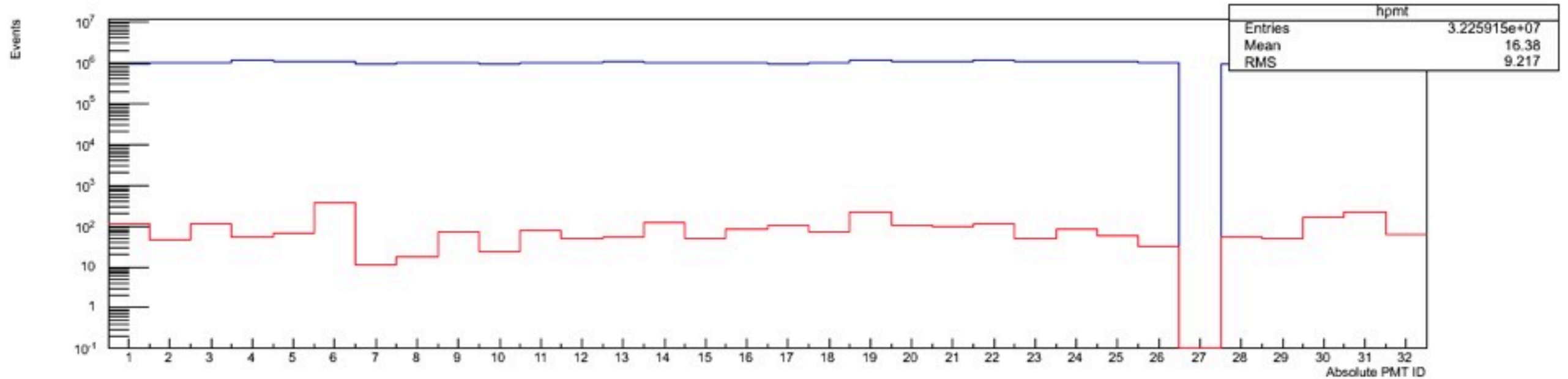
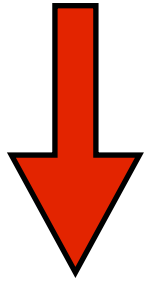
$$300 \leq Q_{10\text{smp}} (= \sum_{i=1}^{10} q_i) \leq 350$$

R86IF0
std DAQ



$$500 \leq Q_{10\text{smp}} (= \sum_{i=1}^{10} q_i) \leq 550$$

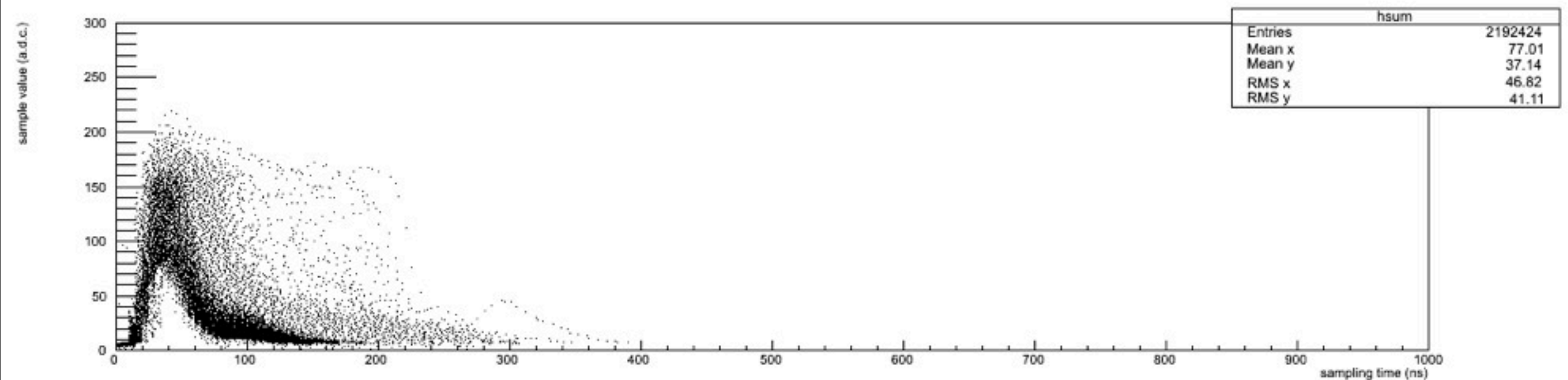
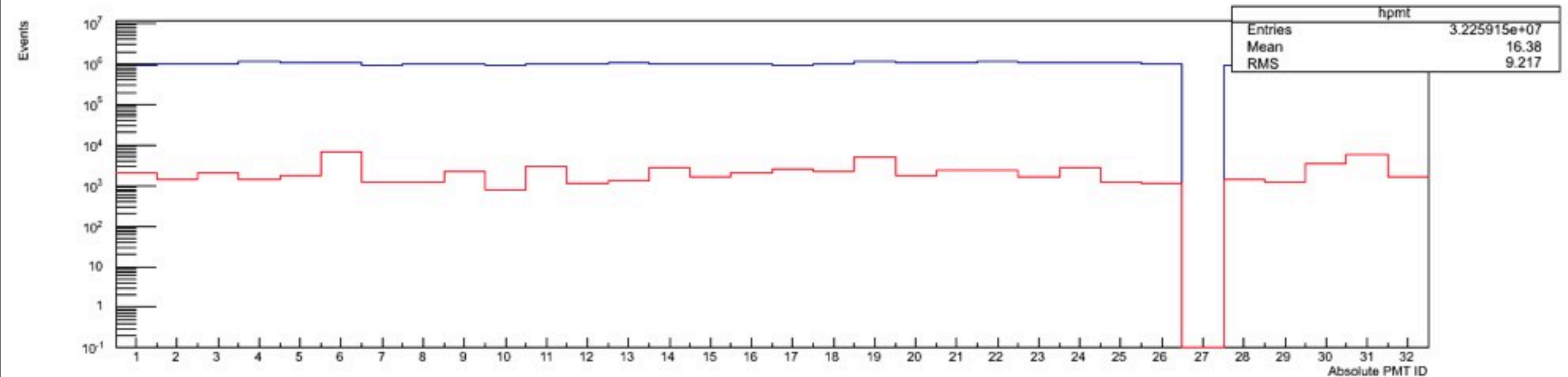
R86IF0
std DAQ



$$1000 \leq Q_{10\text{smpl}} (= \sum_{i=1}^{10} q_i) \leq 1050$$

R86 I F0
std DAQ

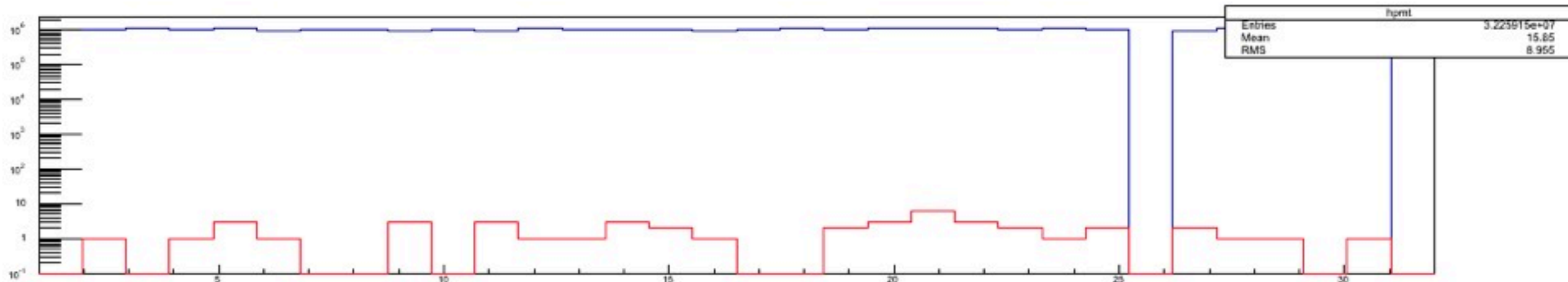
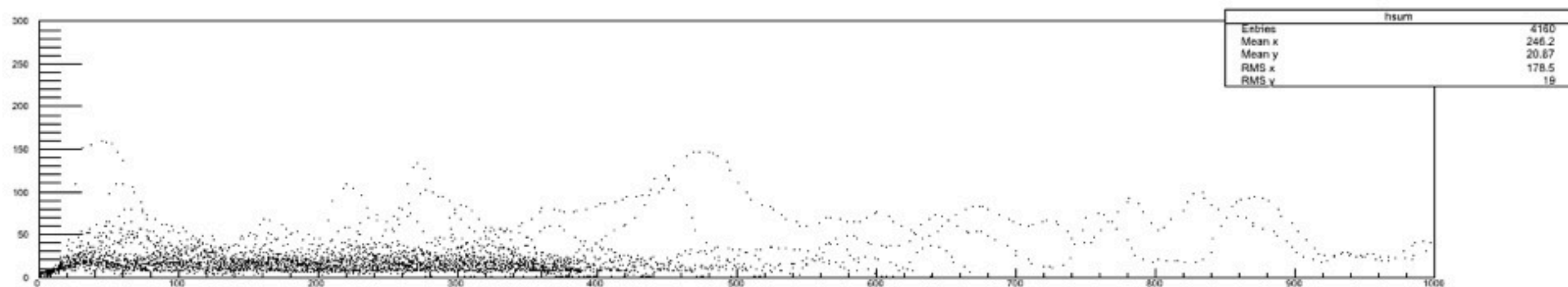
Current setting
for L1 Q over thresh. cond.



$$Q_{I0\text{simpl}} (= \sum_{i=1}^{10} q_i) \geq 500$$

R86 I F0
std DAQ

Strange long hits...
but negligible!



events with N_{Frag}>2
few events over 30 Mevents !!!