

# **TriDAS**

# **Commissioning**

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**KM3 - ITA    Steering Committee    29/05/2013**

# **SUMMARY**

- What we have already
- Fixed issues
- Issues still to fix
- No Problems
- Decisions
- Outline

# What we have already 1/3

- EFCM  $\Rightarrow$  EFWM  $\Rightarrow$  HM  $\Rightarrow$  TCPU  $\Rightarrow$  EM  $\Rightarrow$  storage
- TriDAS GUI
- Monitoring tools : VIS - PulseForm (+ Event Disp.)
- TriDAS MON (transparent for the shifter so far)

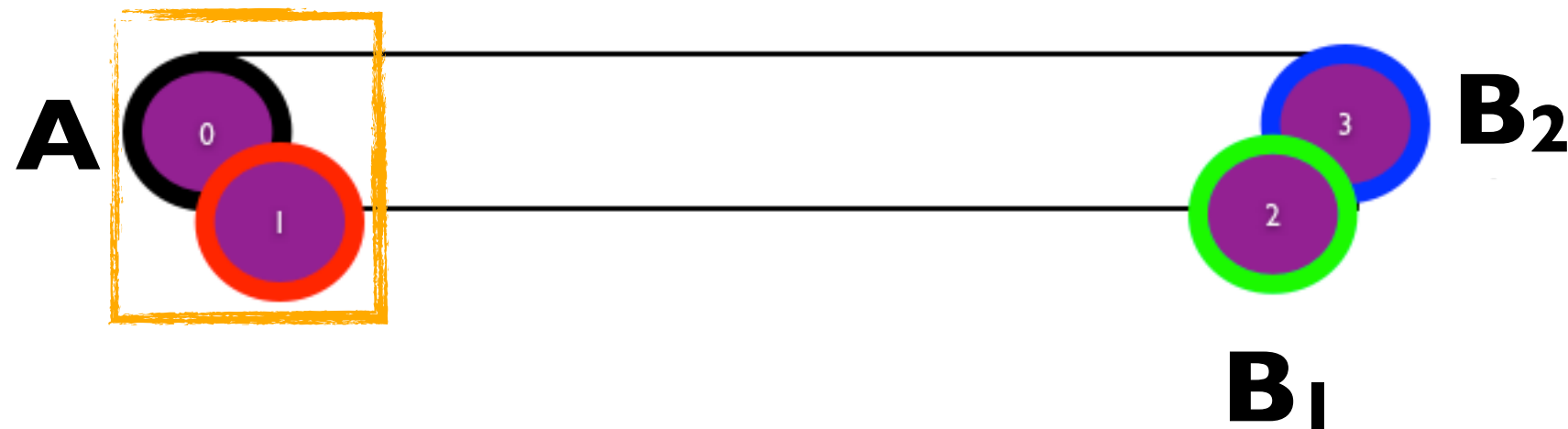
i.e. we have the entire system working...

## **What we have already 2/3**

- Hit + Fifofull + L1trigger rates monitored
- Possibility to dump raw-file
- PostTrigger file correctly written
- Program in C++ (x32) to read PTfiles

# What we have already 3/3

with G.Terreni (Pisa)



Simple Coincidence (SC) : **A** within  $\Delta T_{SC}$  (5 ns/20ns)

Floor Coincidence (FC) : within  $\Delta T_{FC}$  (5 ns/100ns)  
 $\mathbf{A + B_1 \cup A + B_2}$

Charge Over Threshold (Q):  
 $Q_{hit} > Q_{th}$  (10000 a.d.c. / 150 a.d.c.)

Random Trigger:  $\Delta T_{RT}$  (1 ms) / #TS (=200 ms/TS)

# Then, L1 window can be submitted to L2 trigger plugins

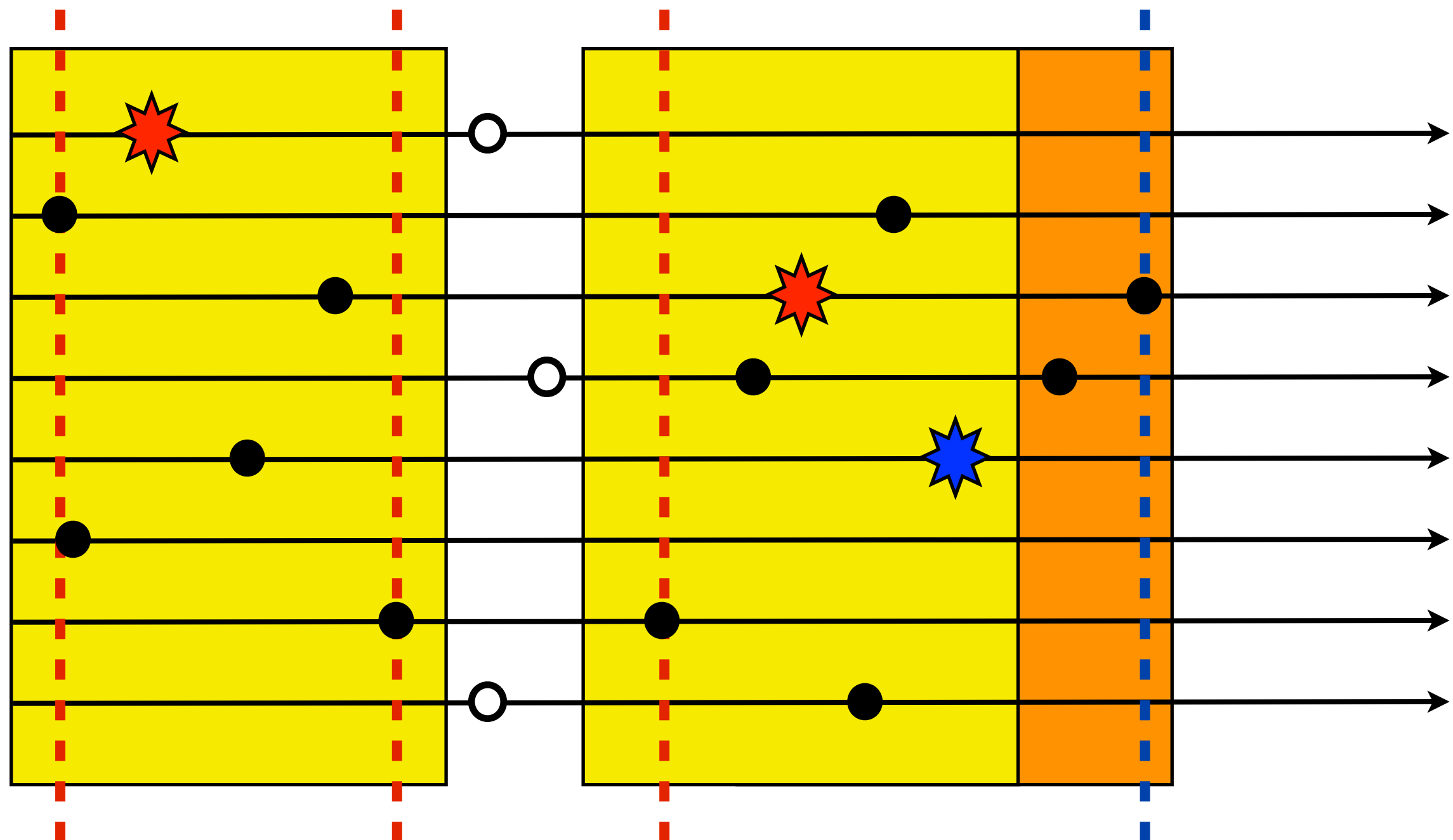
with G.Terreni (Pisa)

★ primary seed

● selected hit

★ secondary seed

○ discarded hit



# Fixed issues

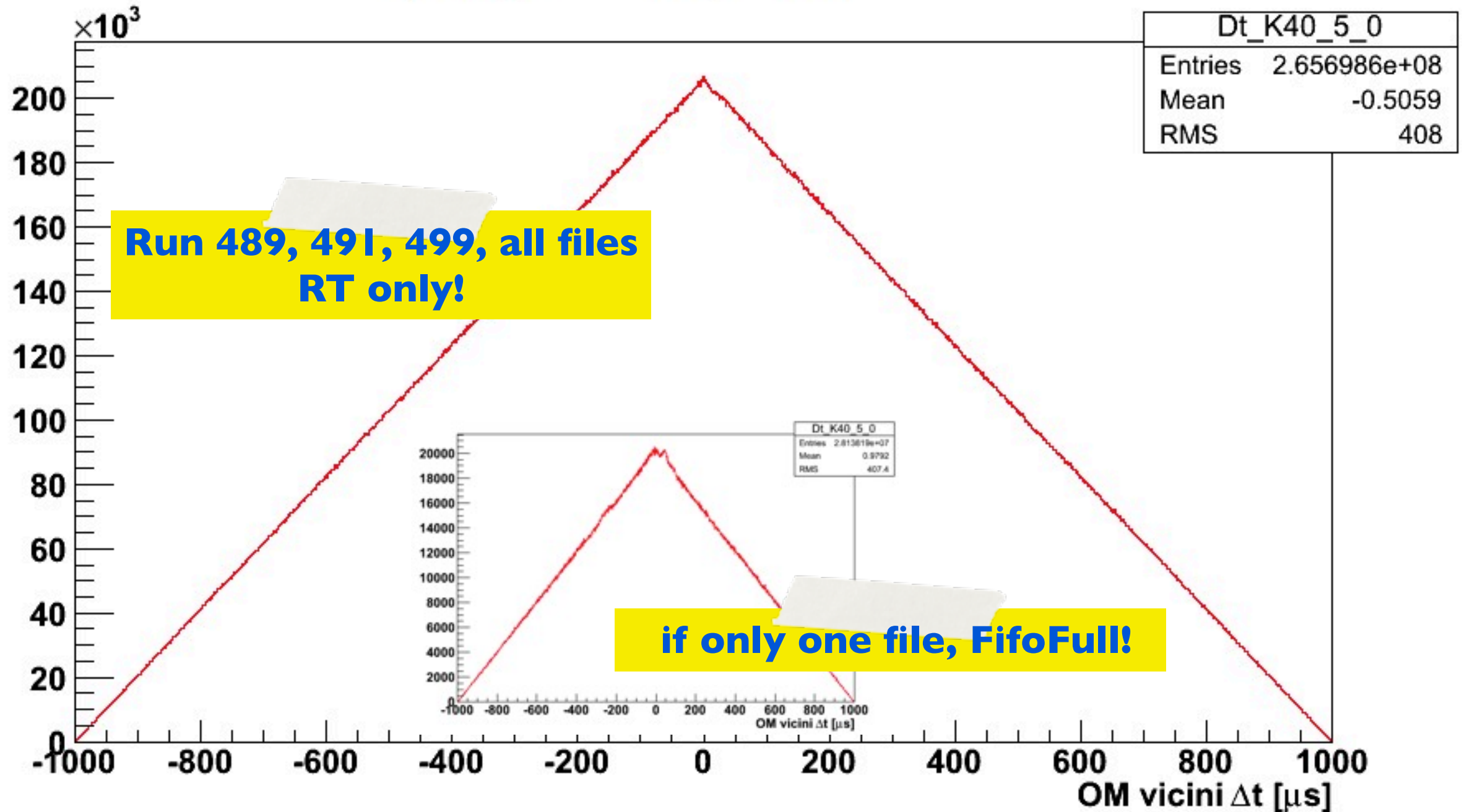
- PTfile dataformat tag
- GPS Absolute Time in PTfiles
- Hit parsing when Random Trigger
- Consistency of Event number in PTfiles of the same run

# Issues to be fixed

- READD bug : Discovered before DAQ net reconfig. - 3 occurrences / 12 h (TC + GT)
- PARSING error: very often (TC + GT + FA + FS)
- TriDAS\_GUI automatic DAQ seg-fault (TC)



$$N_{\text{entries}} = \left( \nu_{\text{single}} \Delta T_{\text{RT}} \right)^2 \nu_{\text{RT}} \text{LiveTime}$$

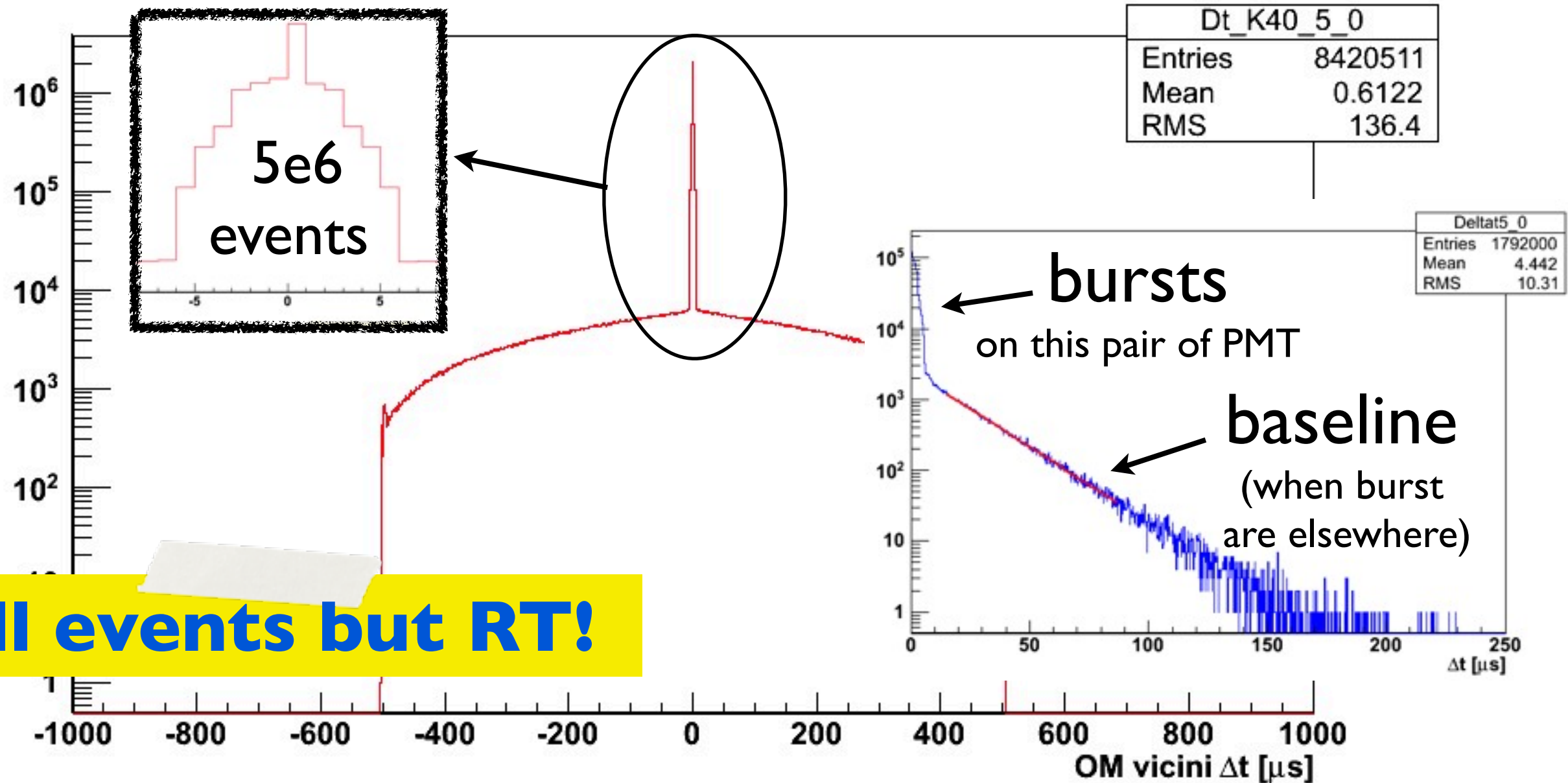


$\nu_{\text{single}} = 50 \text{ kHz}$      $\Delta T_{\text{RT}} = 1 \text{ ms}$      $\text{LiveTime} = 1 \text{e}5 \text{ s}$

$\nu_{\text{RT}} = 1 \text{ Hz}$

**$N_{\text{entries}} \sim 2.5 \text{ e}8$**

$$N_{\text{entries}} = (\nu_{\text{single}} \Delta T_{\text{SC}})^2 \nu_{\text{SC}} \text{LiveTime}$$



$$\nu_{\text{single}} = 50 \text{ kHz} \quad \Delta T_{\text{SC}} = 6 \text{ us} \quad \text{LiveTime} = 1 \text{e5 s}$$

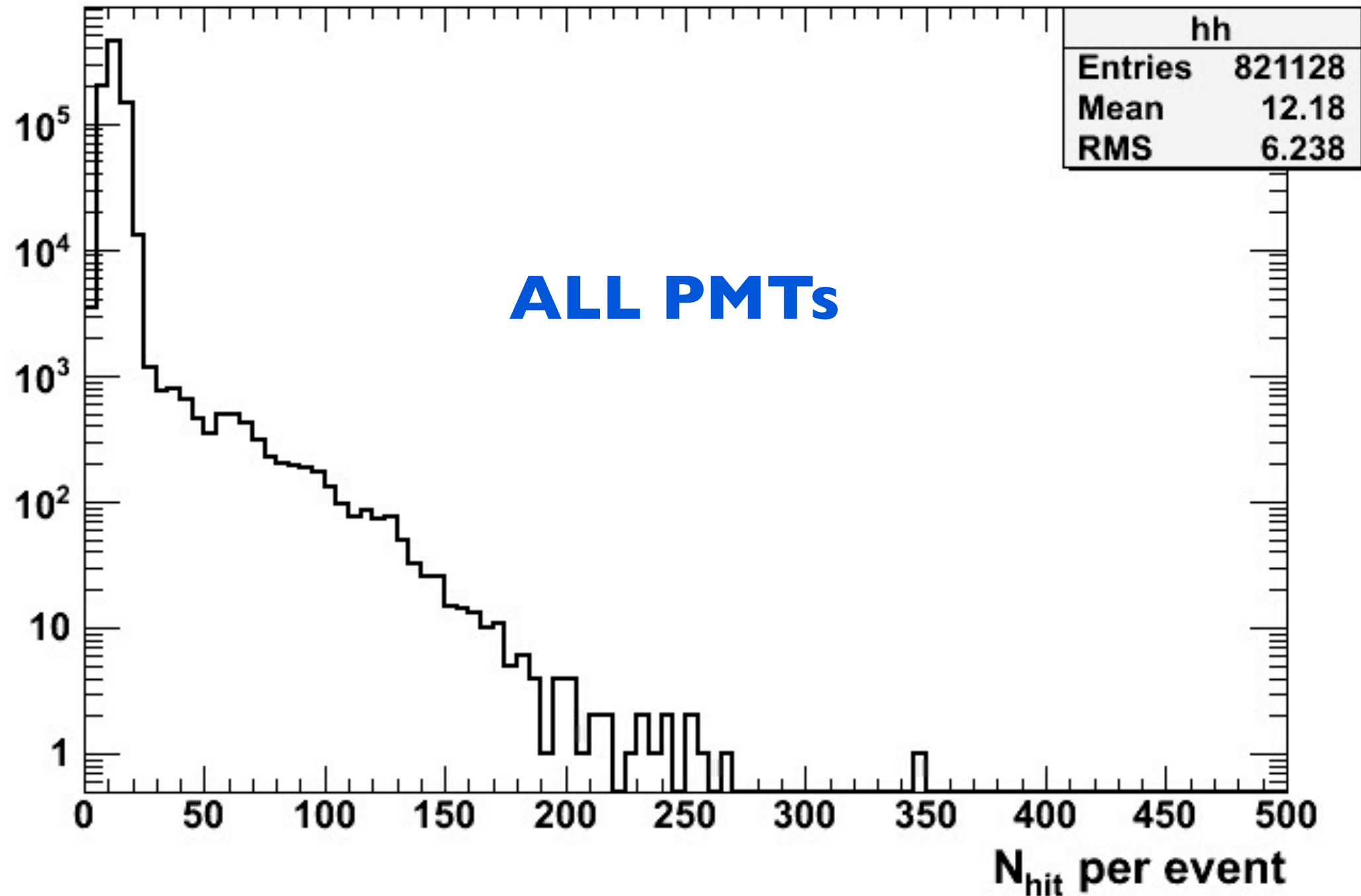
$$\nu_{\text{SC}} = 240 \text{ Hz}$$

$$N_{\text{entries}} \sim 2.2 \text{ e6}$$

# Mean No. of hit in a SC event ~ 10

$\nu_{\text{single}} = 50 \text{ kHz}$     $\Delta T_{\text{SC}} = 6 \text{ us}$    NPMT = 32

SC trigger only!



With S. Biagi

# Decisions

- New values for  $\Delta T_{SC}$  for  $\Delta T_{FC}$
- First L2-Plugin: down-scale SC
- Next L2-Plugin: MultiFloor + Charge

# Outline

- Limit the charge used for L1Qtrig to the first ten samples/hit
- Compute the actual dead-time from FifoFull info
- Get also an estimate of the highest hitrate from fifofull data
- May be add 1 EFWM server
- Automatic *rsync* of PTfiles on FASSERVER