

About raining PMTS

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Reminder:

Methods to identify raining PMTs already exists

Flags for raining exist in the Auger (and SdAuger) root data files since v1r0

The class *IoSdQuality* has the following 4

GAP2012-077

Short_t **Version;**

Short_t **TubeMask;**

Short_t **AnodeMask;**

Short_t **RainingMask;**

You can also access to the daily files : raining_YYYY_MM_DD.txt files

at /sps/pauger/Prod/v2r0/Log/

Checking “raining ” like stations send by Koun

23 raining PMTS detected by Koun for the period: 25/08/2018 - 31/08/2018)

20 were properly flagged as raining in the files, it can be checked in ED

```
Roberto
Id 825

100MHz: current 100000165 next 100000154
40MHz: current 40000108 next 40000104
SawTooth: Previous 11 Current 39 Next -37
GPS Offset 7.63
Nanosecond (EOT) 530041490

Trigger1Algo Trigger ToT (+ToTd+MoPS) Type 3074 (TOT) NSamples 768
Event Clock Tick 53004230 offset -1
Calib version / FPGA model 24 0
Calib start 1219754084 end 1023672843 (-196081242 s)
T1/T2/TOT rate -1 / -1 / -1 Hz

Tubes Masked: 1 1 1
Tubes OK: 1 1 1
Tubes Raining: 0 0 1

QC Anode/Tube OK 1 / 1 == 1 / 1 == 1 / 1 ==
Dynodes Baselines:
55.53 B1 0.63 45.82 B1 0.96 49.05 B1 0.51
Anodes Baselines:
44.85 B1 0.51 49.56 B1 0.52 56.86 B1 0.4
```

Checking "raining" like stations send by Koun

1 had no data during the period (823)

3 have more serious problem and they are cut but the 1rst or second level of QC

It can also be checked in ED

ex: tank 602 , PMT2

```
Arcana
Id 602

100MHz: current 100000106 next 100000106
40MHz: current 40000174 next 40000174
SawTooth: Previous 36 Current 33 Next 30
GPS Offset 5.95
Nanosecond (EOT) 729083343

Trigger1Algo Trigger Th (+ToT+ToTd+MoPS) Type 3585 (TOT) NSamples 768
Event Clock Tick 72908408 offset -1
Calib version / FPGA model 26 0
Calib start 1219755028 end 1025049406 (-194705623 s)
T1/T2/TOT rate -1 / -1 / -1 Hz

Tubes Masked: 1 1 1

Tubes OK: 1 1 1

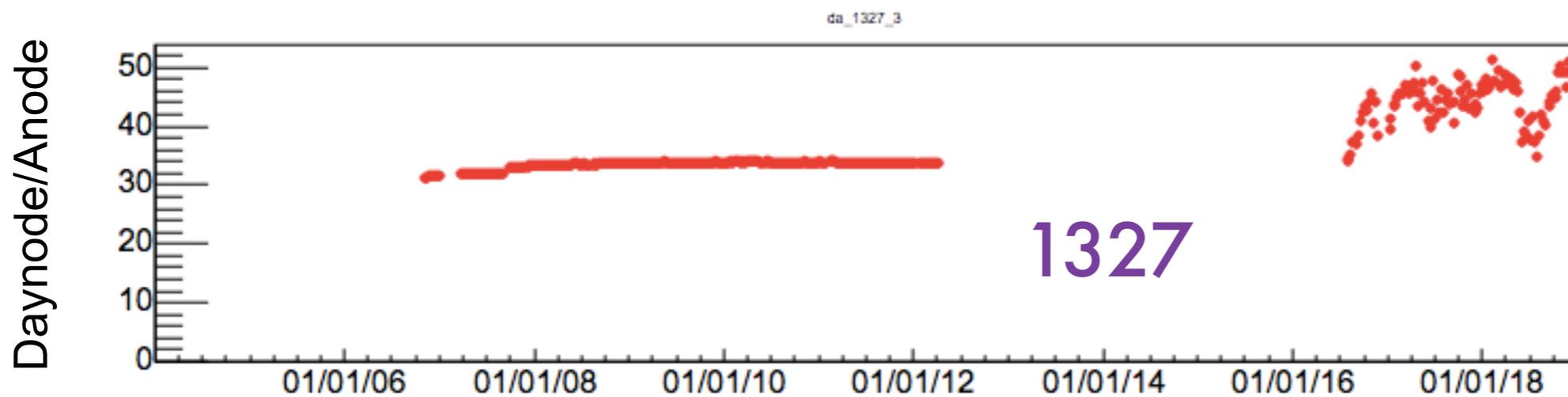
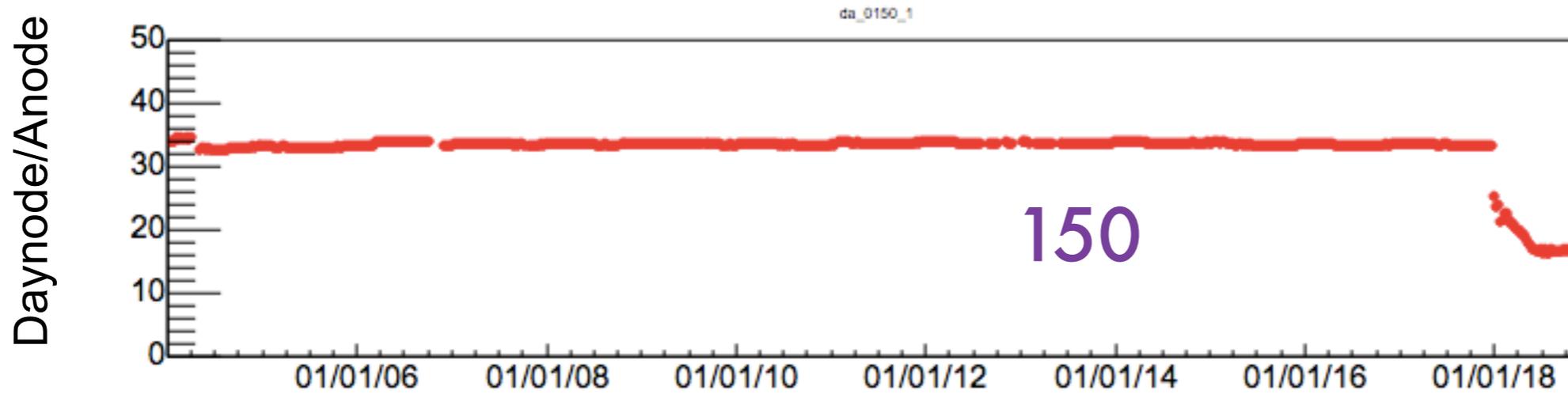
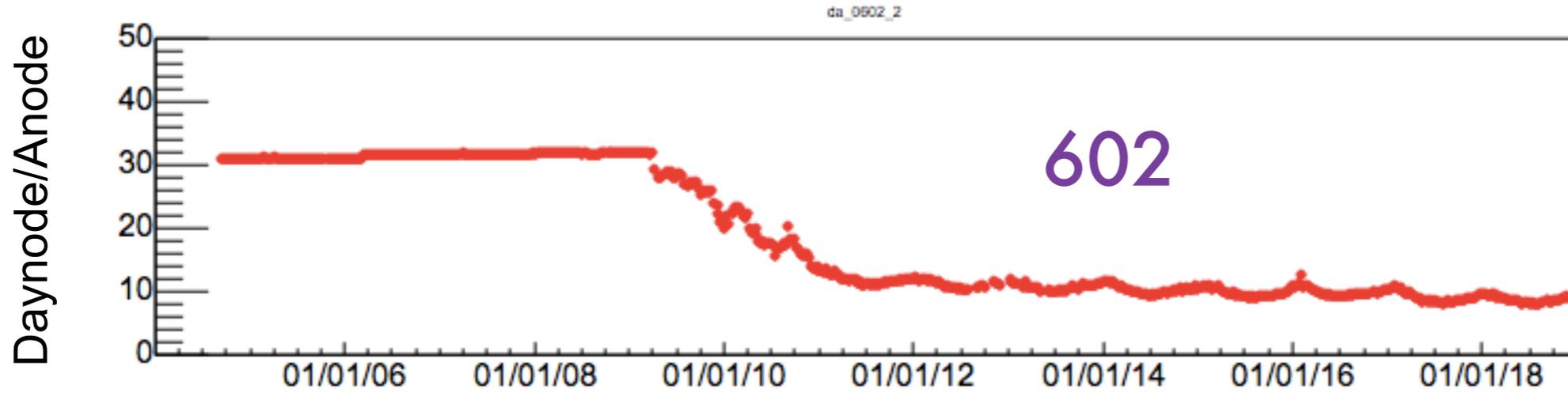
Tubes Raining: 0 0 0

QC Anode/Tube OK 1 / 1 == 0 / 1 == 1 / 1 ==
42.99 B1 0.51 50.69 B1 0.56 50.84 B1 0.47
Anodes Baselines:
39.86 B1 0.59 45.55 B1 0.57 46.37 B1 0.52
```

Anode is cut with the 1 QC
Full PMT with 2 QC

```
Dynode/Anode
Rates -1.351e-06 -1.078e-06 -2.152e-06
Ratio 32.3 B1 0.56 7.84 B1 0.05 32.15 B1 0.22
```

Pathologies of 3 other PMTs



Comments

Its better to use the existing tools when possible

Always apply the 1rst level of quality cuts before checking for raining :

ex: if the anode is Bad, the raining algorithm does not work