

Blue: Included in experimental set-up

Red: Added for this test

NB: PMT Pulse (f1) is random,
while EDTM pulse is synchronous;
 $f1 \gg f2$

- Check if $DT(PMT) = DT(EDTM)$
 1. Enable Triggers 1 & 3
 2. $N_{t1} / N_{\text{scalar4}} =? N_{t3} / N_{\text{scalar5}}$
- Check if able to reconstruct real PMT rate
 1. Enable Triggers 1 & 2
 2. $LT = N_{\text{TDC2|t1}} / N_{\text{scalar4}}$
 3. $\text{Real-Rate} = (N_{\text{TDC2}} - N_{\text{TDC2|trig1}}) / LT$
- How to use EDTM during experiment
 1. For S2m: Only activate EDTM pulse for one PMT on left and one on right at same time. If more are activated, an EDTM pulse can be lost, but will not be recorded as lost in trigger containing S2m.
 2. For S0: EDTM can be activated for both PMTs
 3. For GC: Only activate EDTM for one PMT at a time

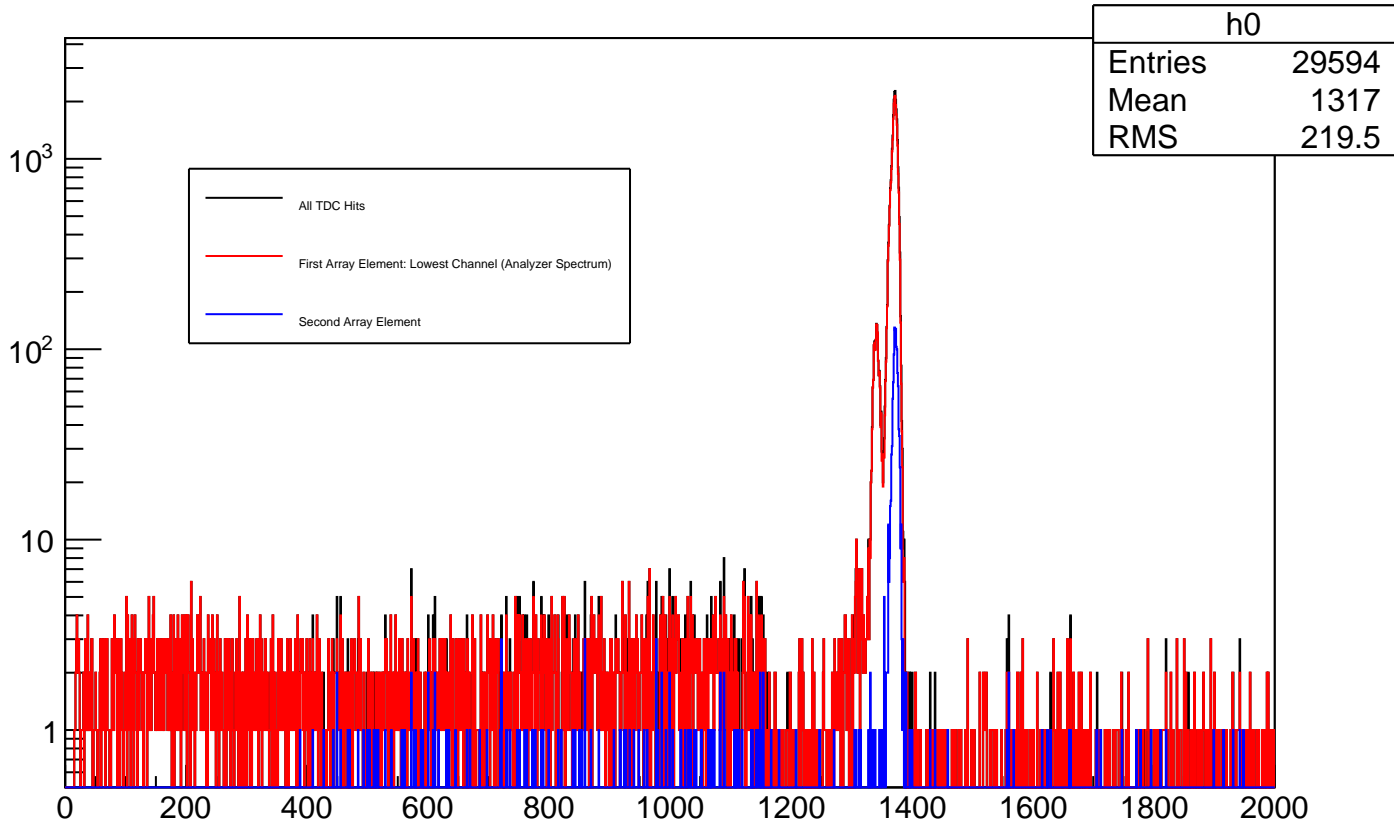
Comparison of Computer live-time between PMT and EDTM signals

PMT rate	EDTM Computer Live-Time	Dead-Time after each trigger (micro-seconds)	PMT Computer Live-Time (Measured)	PMT Computer Live-Time (Calculated)
550 Hz	0.9159 +- .0142	161	0.8993 +- .0039	.9125 +- .0141
3.5 kHz	0.7120 +- .0120	118	0.7055 +- .0013	.7100 +- .0120
25 kHz	0.2410 +- .0065	125	0.2310 +- .0002	.2403 +- .0065
200 kHz	0.0305 +- .0028	151	0.0309 +- 2e-5	.0304 +- .0028
1.1 MHz	0.0047 +- .0011	184	0.0057 +- 5e-6	.0047 +- .0011

$$LT_{EDTM} = 1/(1 + f_{PMT} \tau)$$

$$LT_{PMT} = LT_{EDTM} (1 - f_{EDTM} \tau)$$

RHRS PMT 5



LHRS s0-A

