

Dark rate measurement status report

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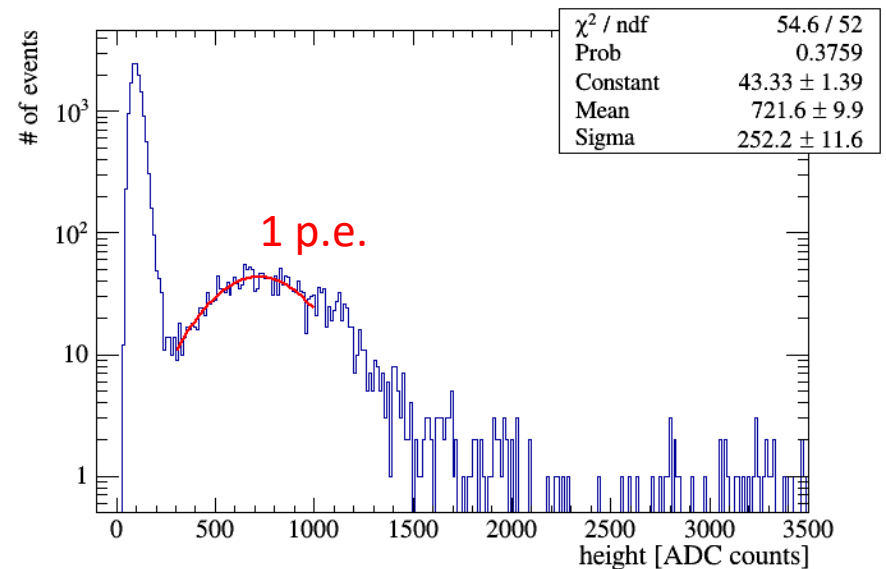
XP82B20

(which had no signals with positive socket when I checked by oscilloscope last week.)

- I checked with another negative socket, then I can find signals.



(old type PMT)

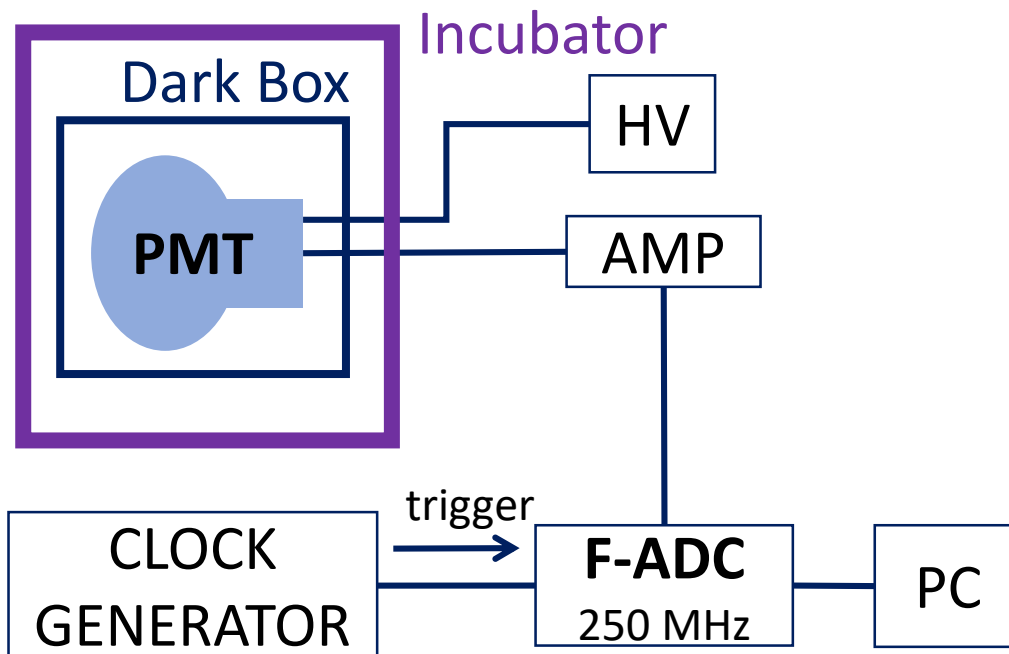


the gain of XP82B20

Dark rate measurement

- We measured dark rate by F-ADC, keeping the temperature at 13 and 20 °C with incubator.
- We counted the dark noise signals above the threshold 0.3 p.e. and 0.4 p.e.
- To check the consistency, I took the data twice for each Chinese PMT.
 - I waited for 1 hour between 1st and 2nd measurement.

Setup (for dark rate measurement)



1st PMT (I reported before)

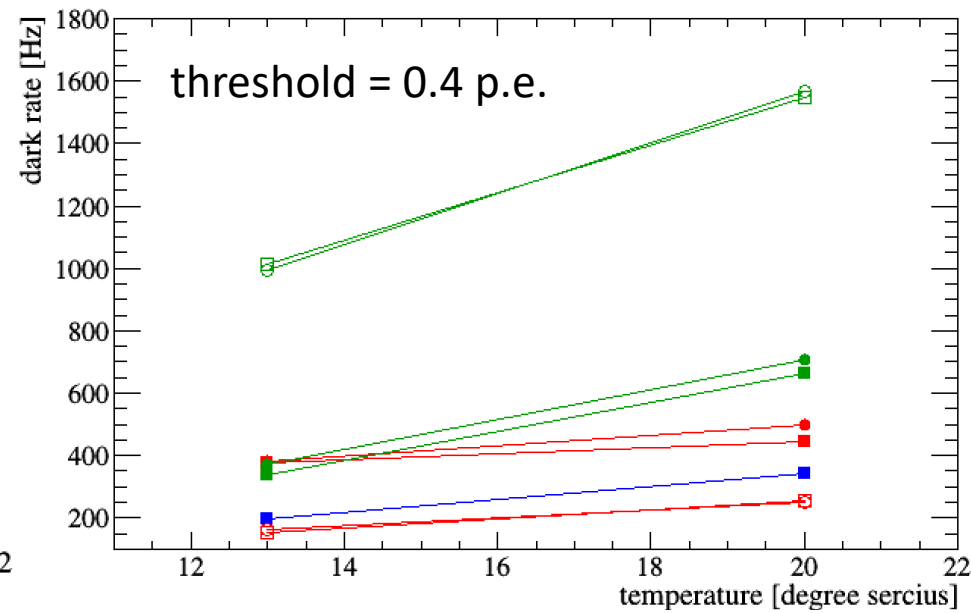
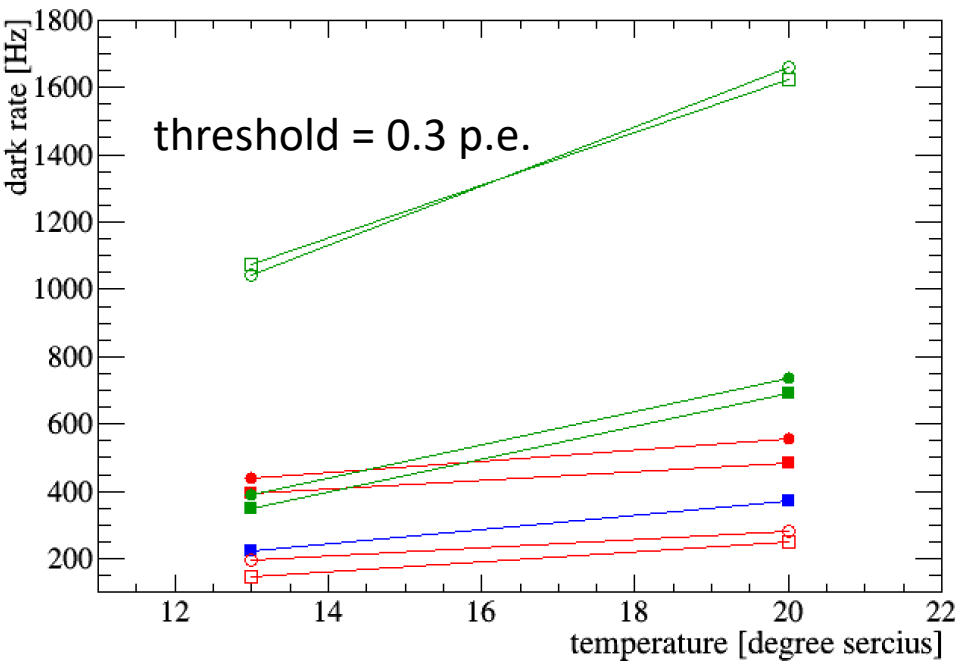
- Negative HV for Hamamatsu
- Positive HV for XP72B2F
- Negative HV for XP82B20

2nd PMT

- Negative HV for XP72B2F
- Negative HV for XP82B20
- 1 GHz F-ADC for XP72B2F

Dark rate measurement

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The temperature dependence of dark rate

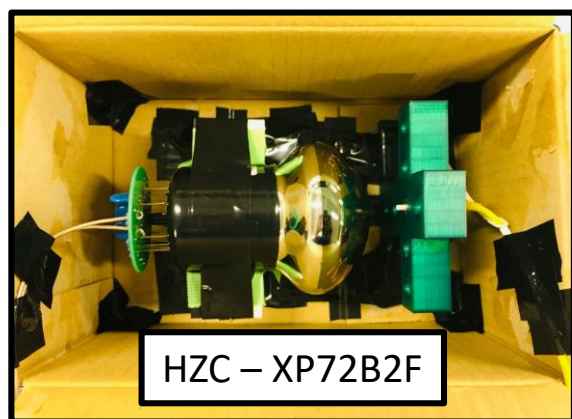
1st PMT (I reported before)

- - HZC_XP82B20 1st time ● - 2nd time
- - HZC_XP72B2F 1st time ● - 2nd time
- - Hamamatsu_R14374

2nd PMT

- - HZC_XP82B20 1st time ○ - 2nd time
- - HZC_XP72B2F 1st time ○ - 2nd time

- The rates of 2nd PMT of XP82B20 were higher than those of 1st PMT for two times with same negative HV.
- The rates of 2nd PMT of XP72B2F were lower than those of 1st PMT for two times with oppsite HV.



(new type PMT)



(old type PMT)