Three bars test update

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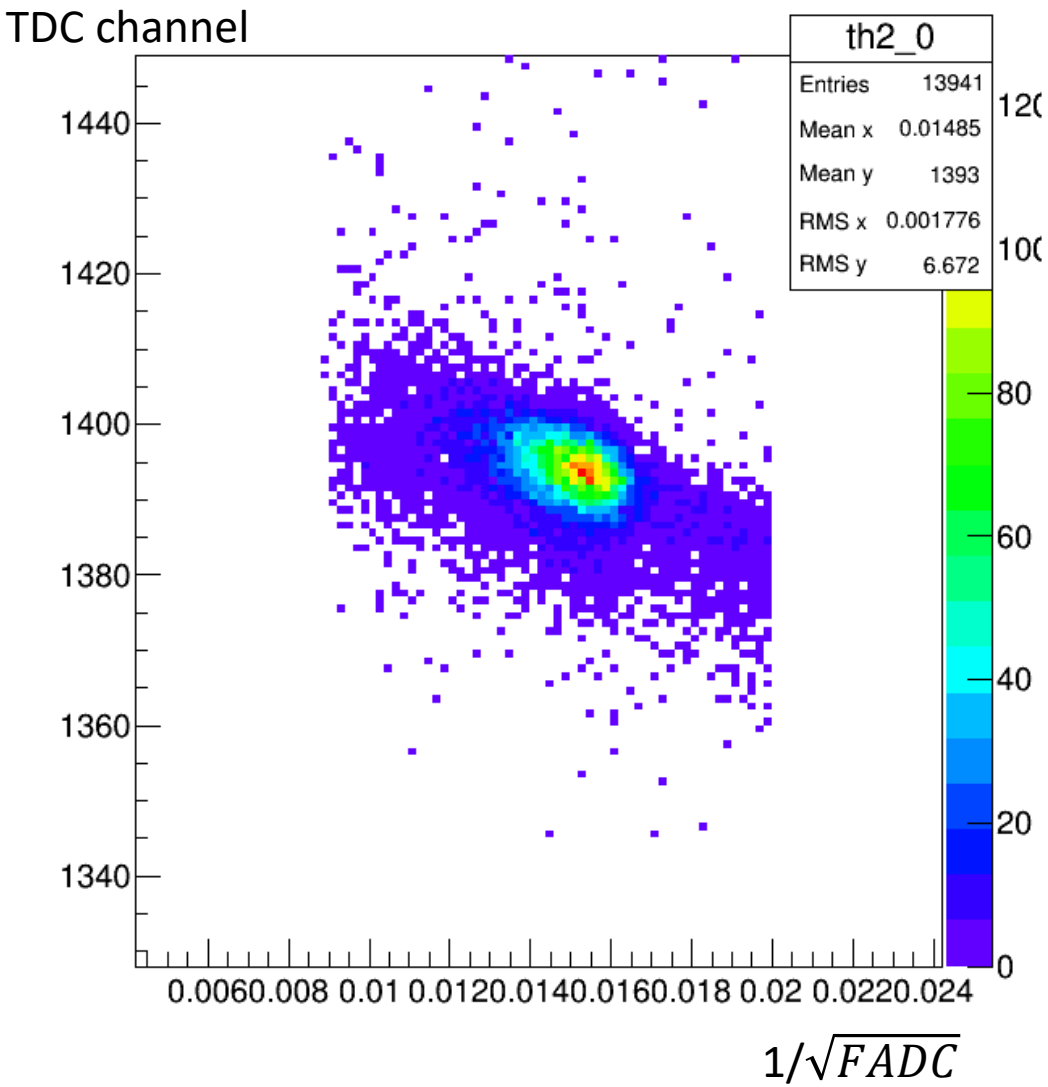
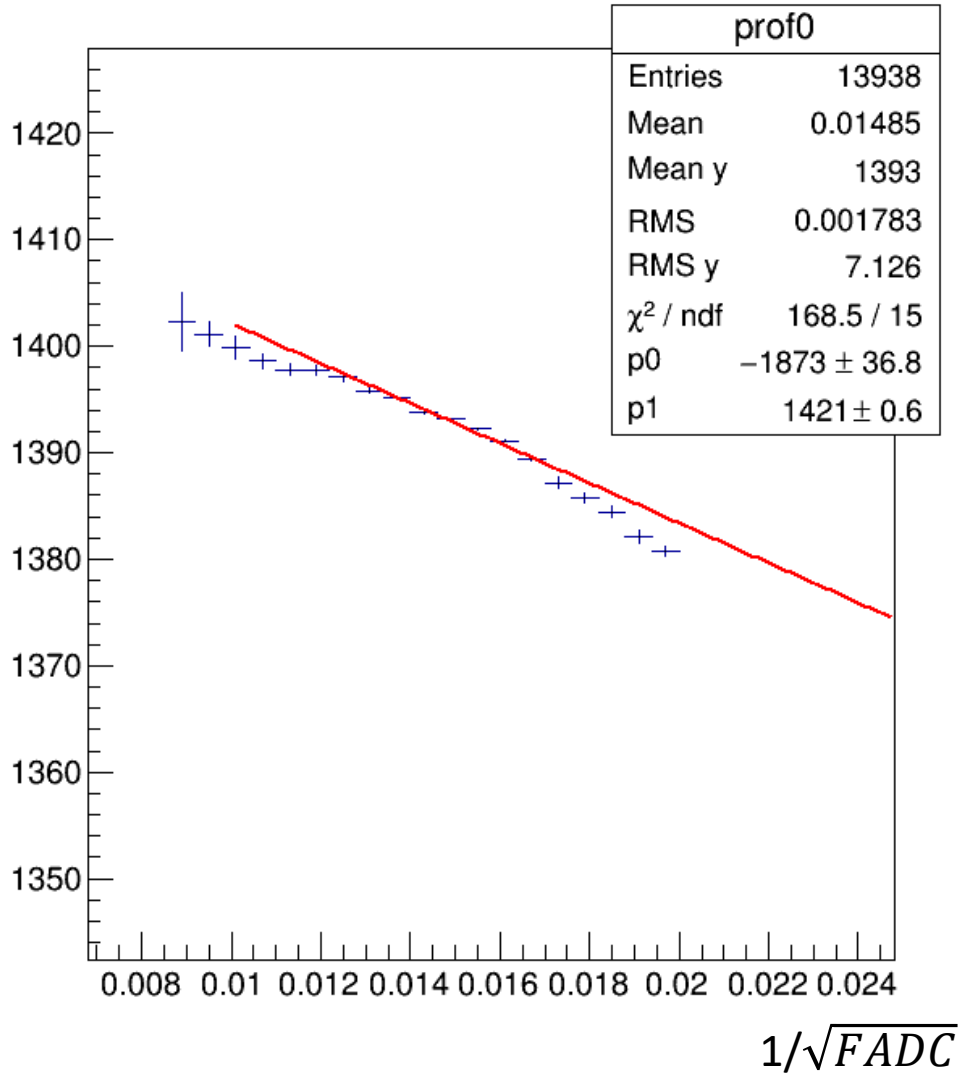
Time walk correction

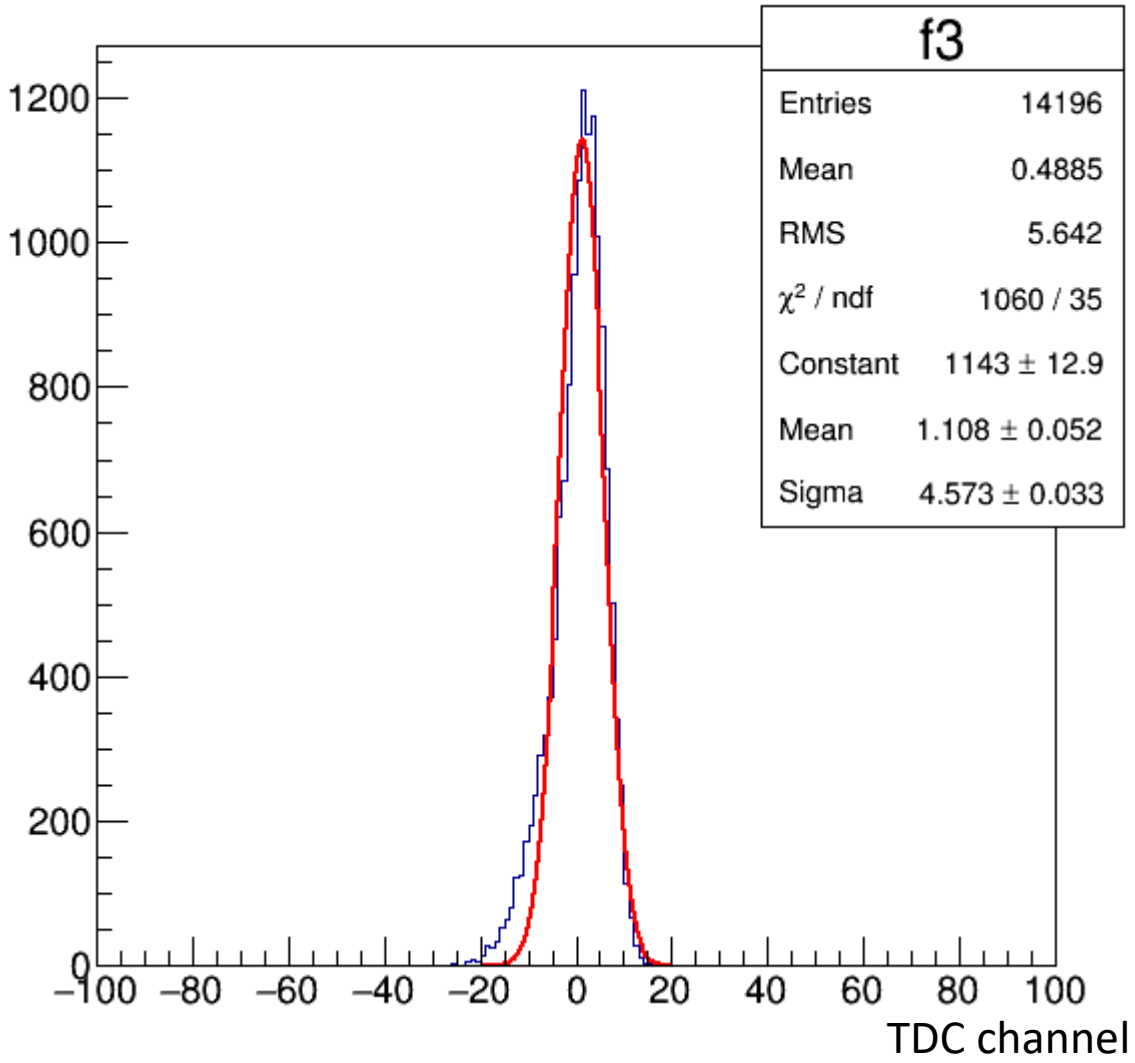




Time walk correction

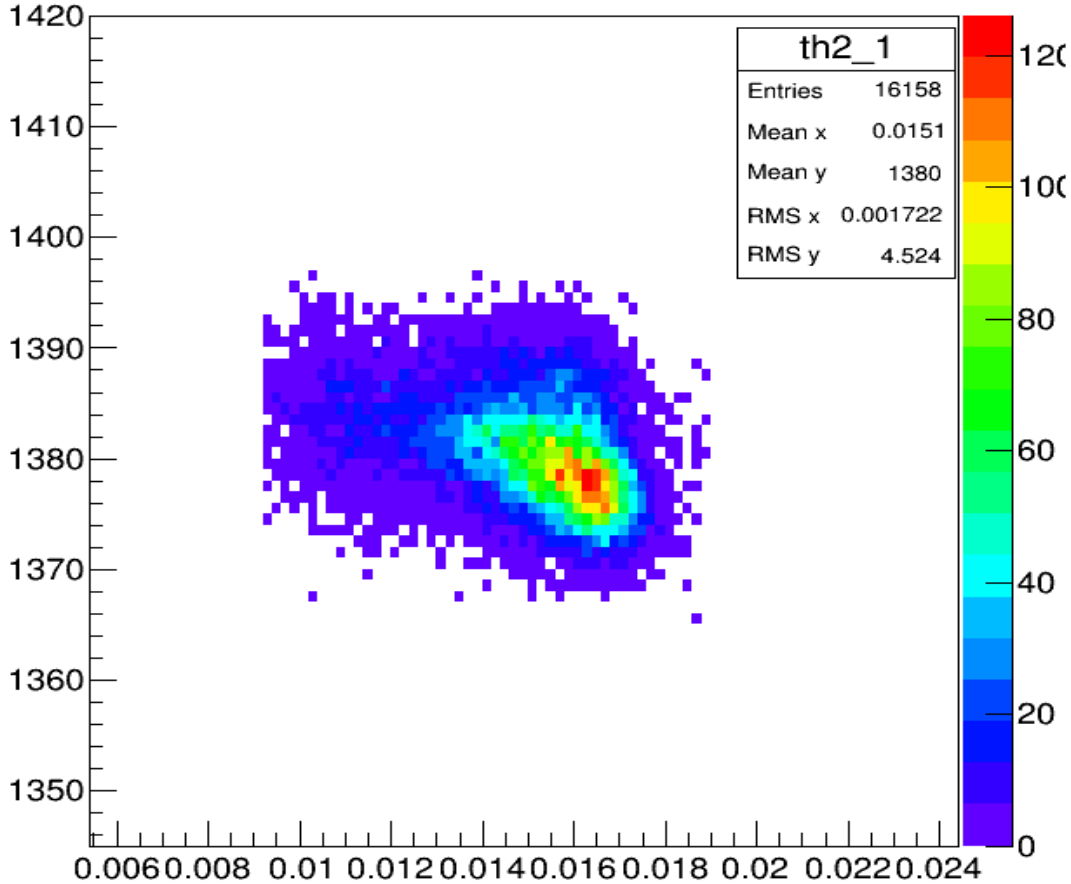
Processing and cut

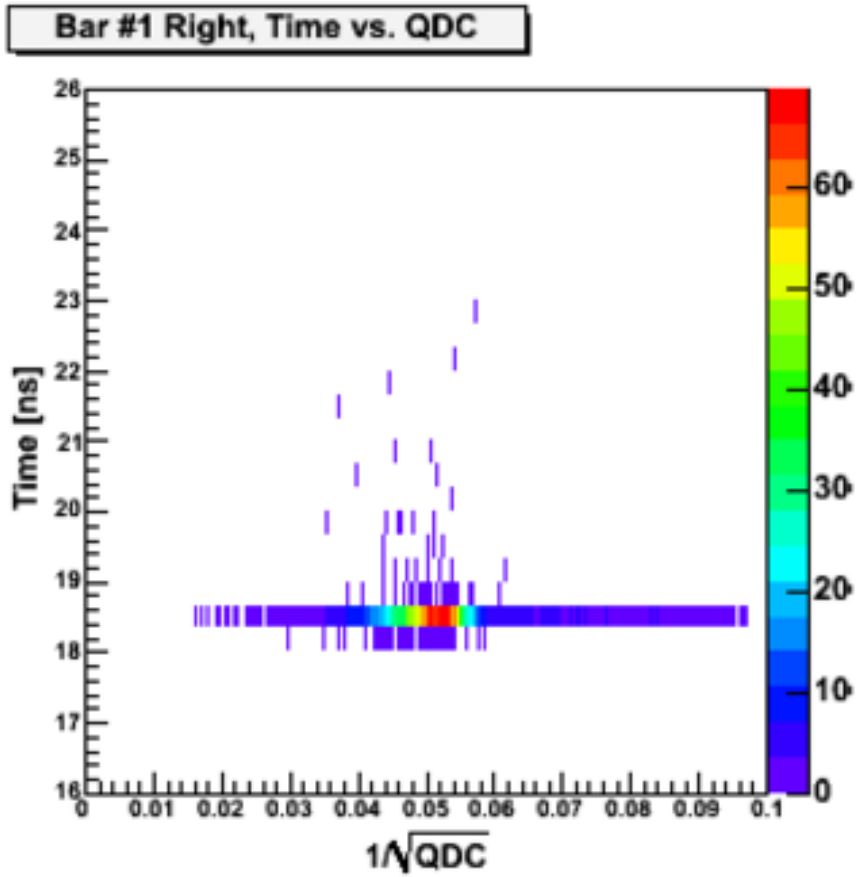
- Hit position cut
- Time walk correction
- Low signal and high signal cut



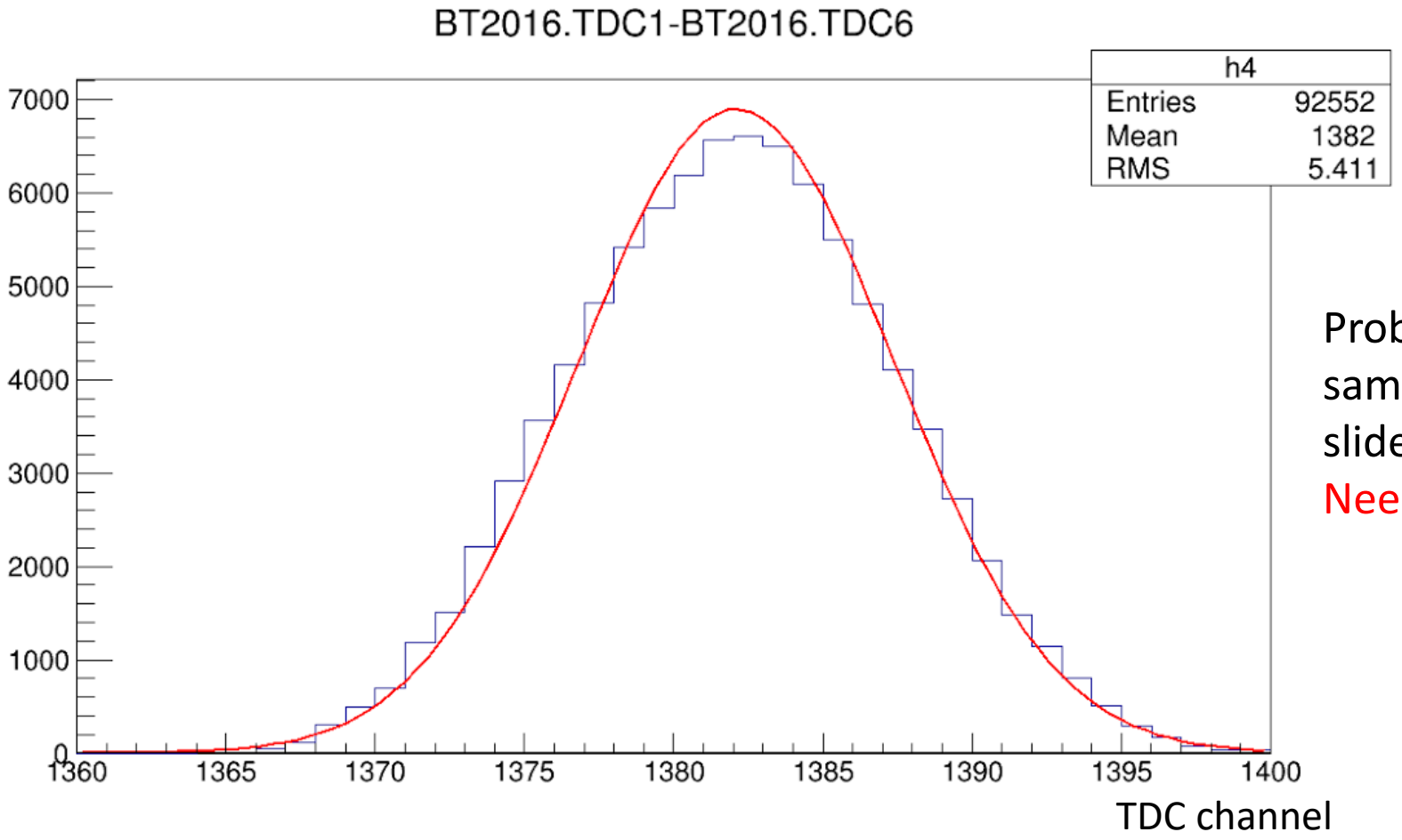
Reference PMT problem

- Time distribution of reference bar which is used for trigger is too wide, it should be a constant(time difference between trigger time and trigger PMT).





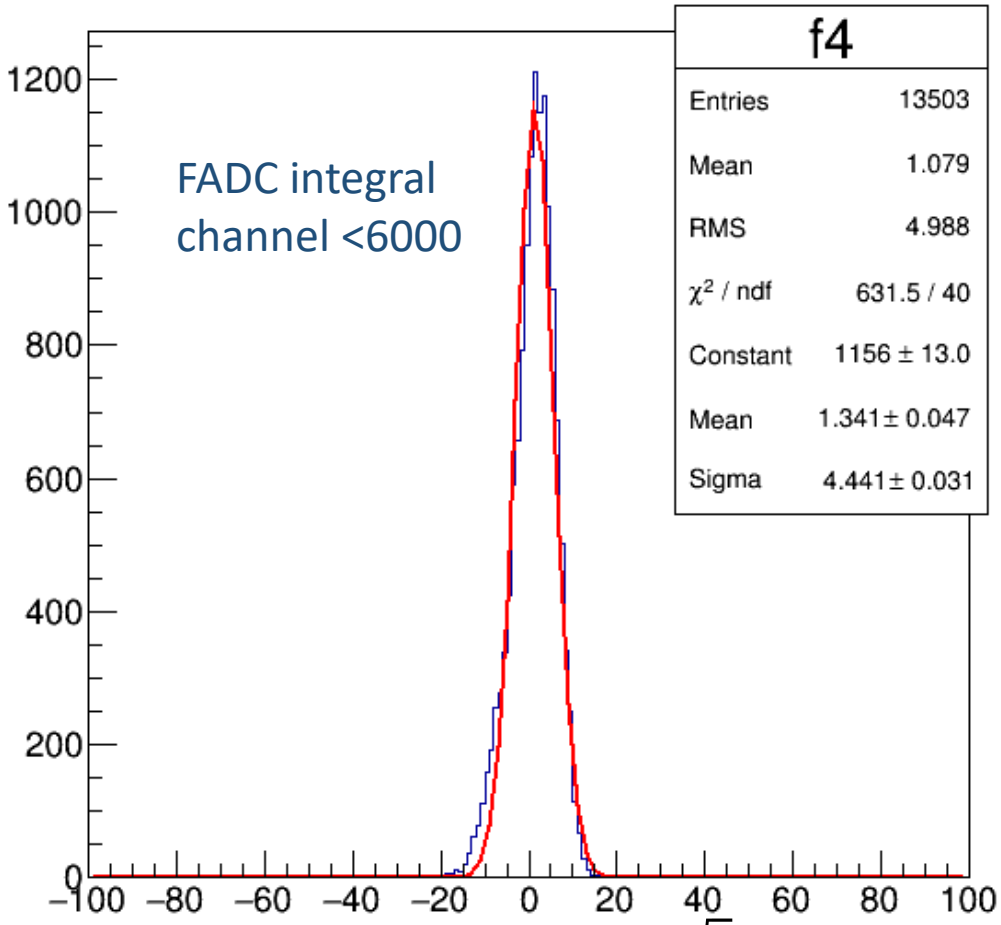
Time difference between two outputs from Fan in-out of one PMT signal



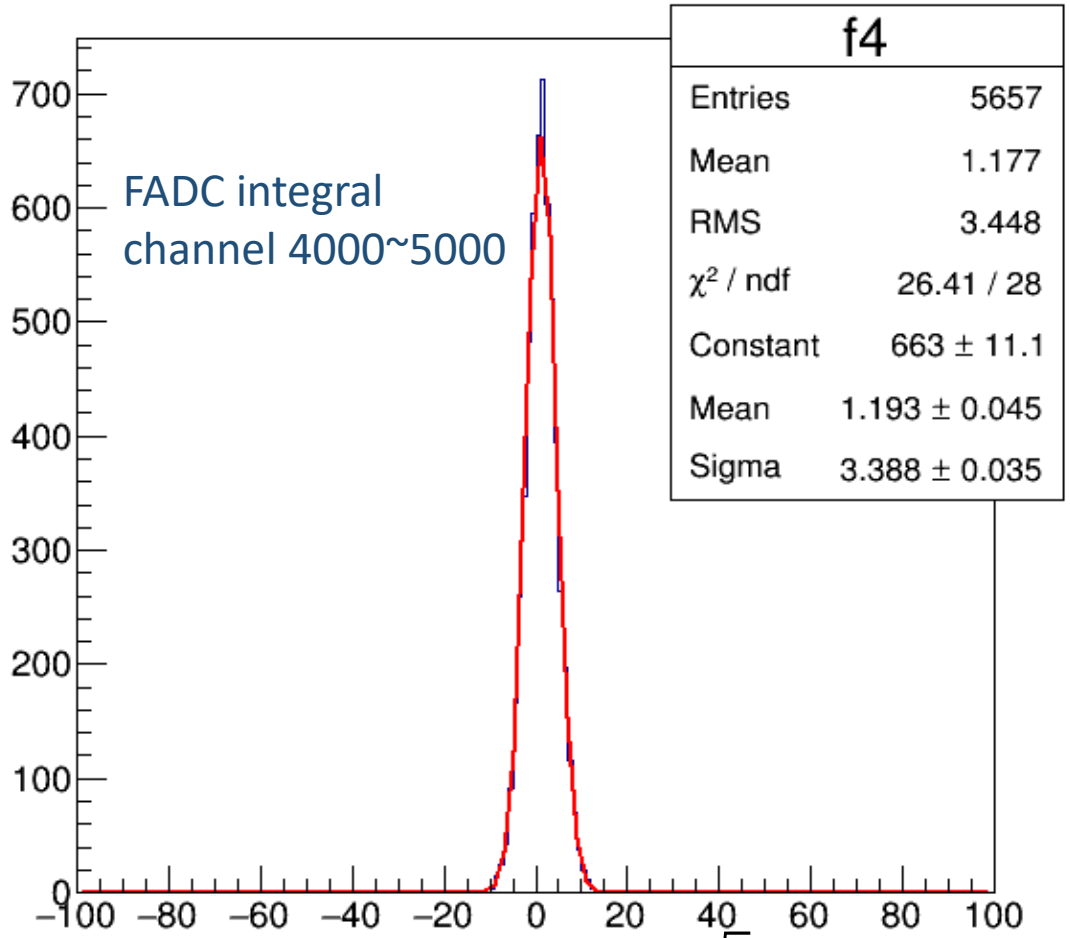
Problem maybe caused from same reason as previous slide.

Need to check plug-in board.

Time resolution with trigger PMT FADC cut



Time resolution: 4.441* 35ps * $\sqrt{\frac{2}{3}} = 126.8ps$



Time resolution: 3.388* 35ps * $\sqrt{\frac{2}{3}} = 96.76ps$

Vince's result

Table 2: Timing resolution results using three bar method with Hamamatsu R9779 PMTs

run#	Raw Resolution [ps]	Time Walk Corrected Resolution [ps]	Time Walk Corrected with QDC cuts Resolution [ps]
1480	287	T Spectrum: 184	T Spectrum: 169
1484	T Spectrum: 202	66	54-58
1487	T Spectrum: 178	N/A	N/A

- The HV of PMT in run 1484 is 100V larger than 1480
- Also the HV of PMT in run 1487 is 100V larger than 1484