

# TOF - TW Calibration and Bad Channel

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# Content

- Progress with calibrations
- Bad channel in TOF1

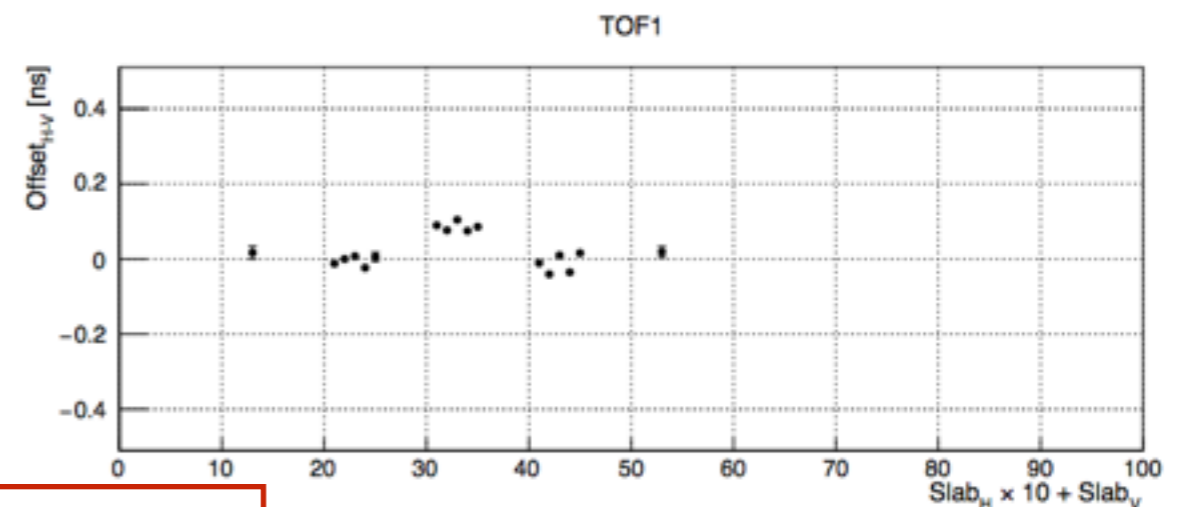
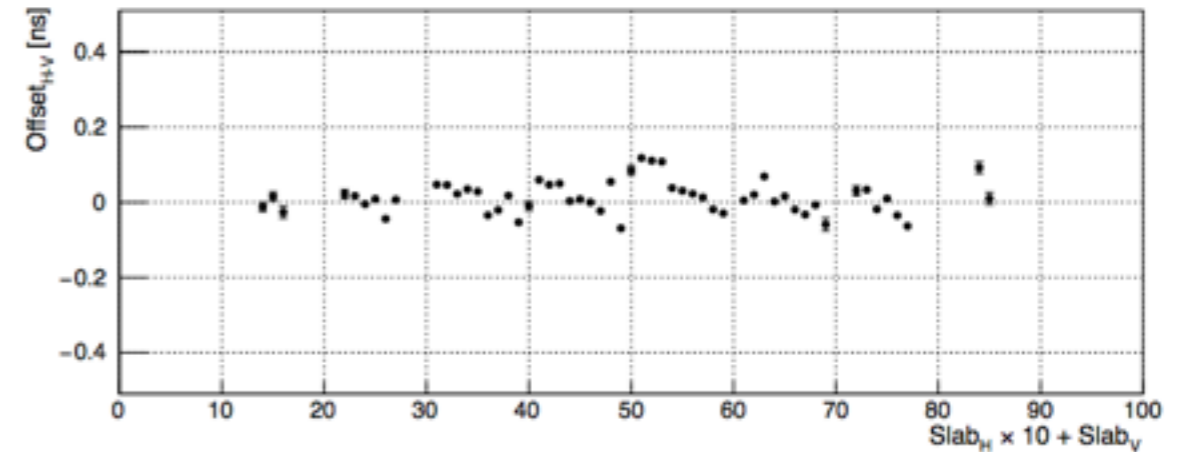
# Progress with Calibrations

- Issues with low efficiency
- One potential issue identified was time-walk calibration
- We have made no significant progress
- We are facing issues with calibrating certain channels
  - either low statistics
  - or strangely shaped TW curve

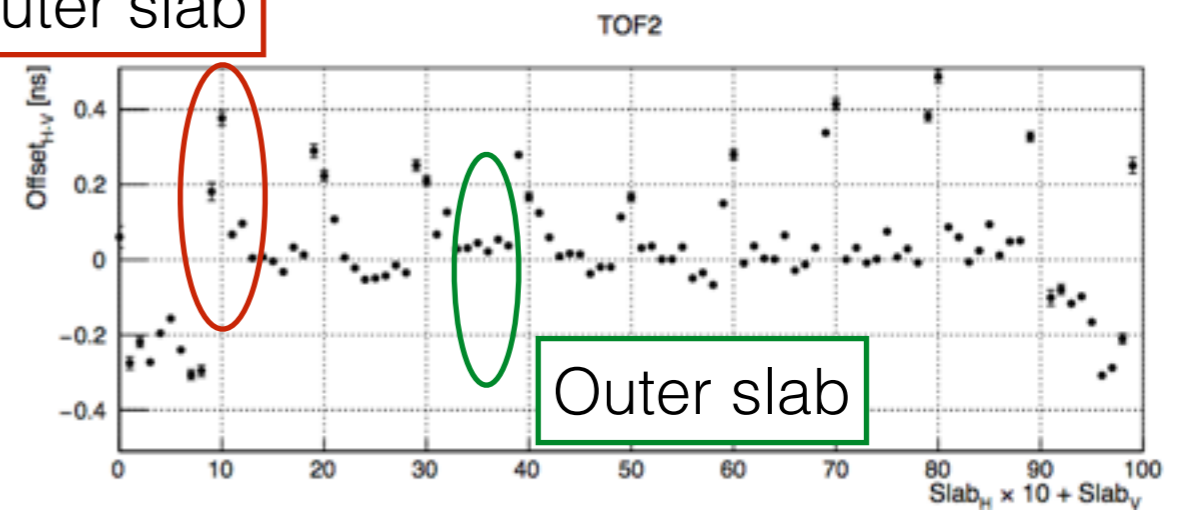
# Progress with Calibrations

- Offsets observed in Slab DT in each pixel
- Outer slabs exhibit larger offsets

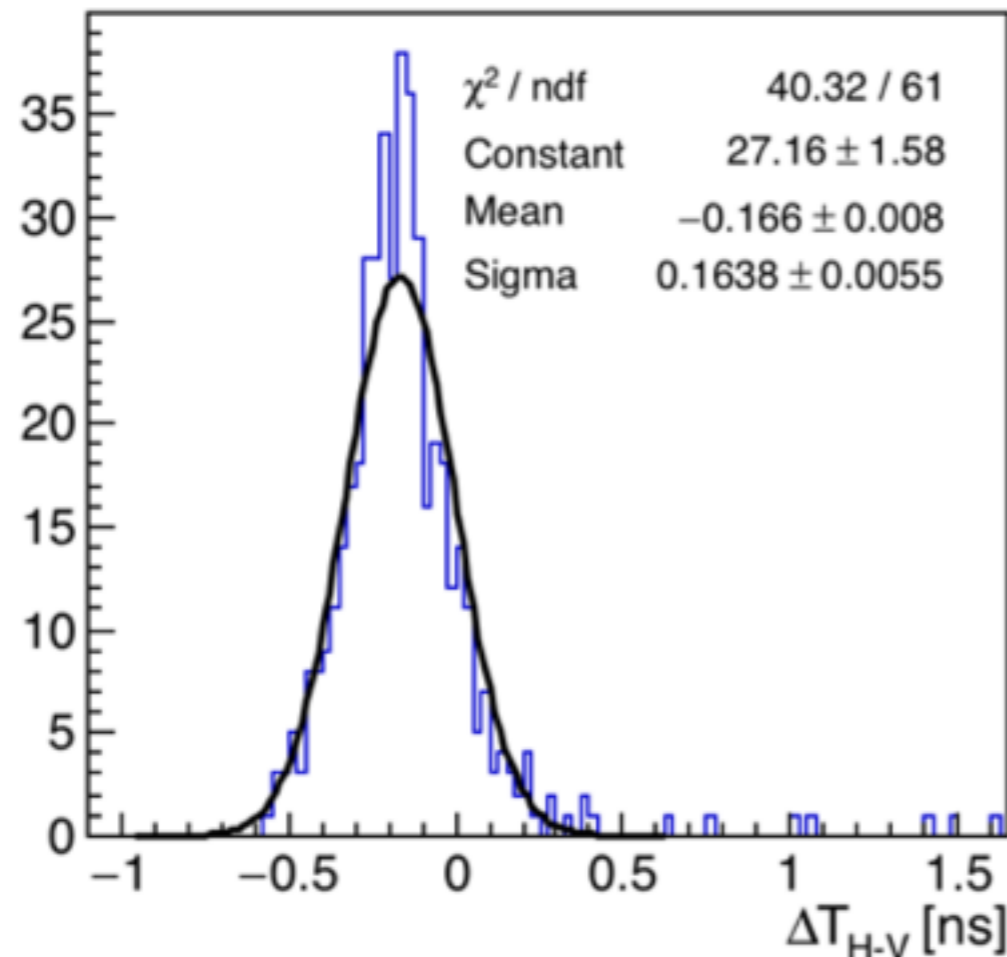
Offsets by pixel



Outer slab



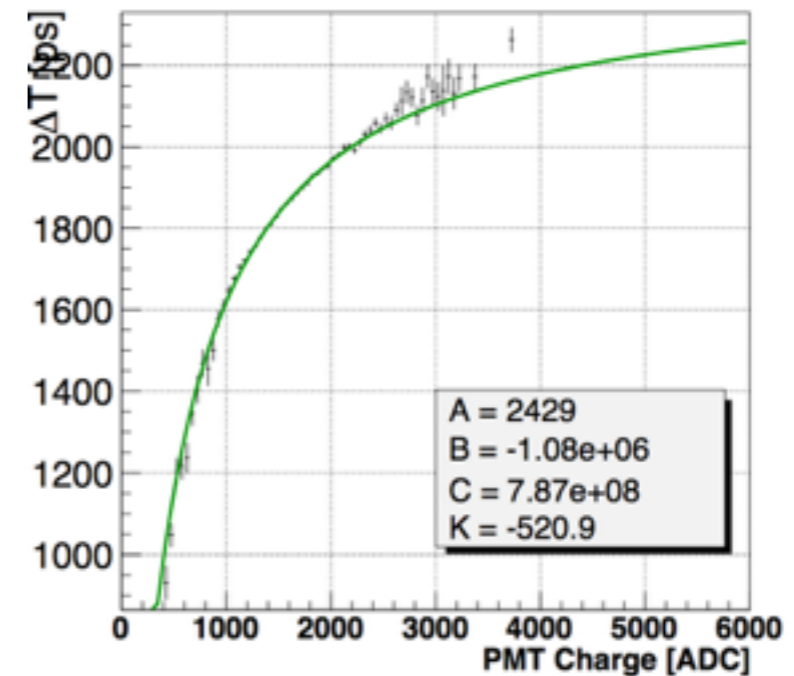
TOF2 H:9 V:5



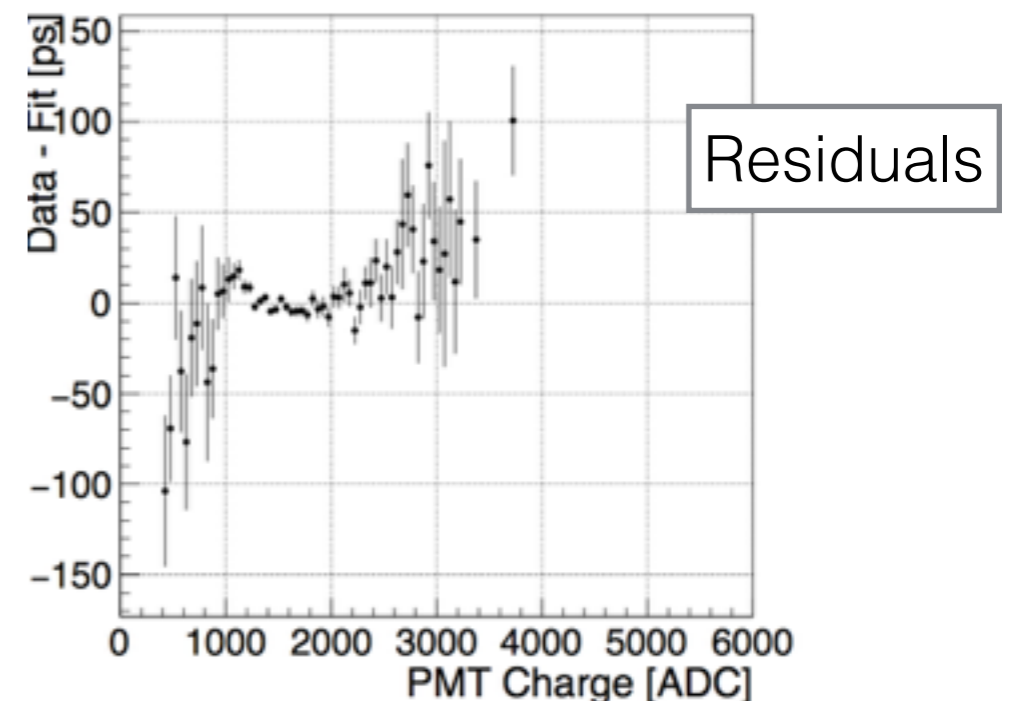
# Examples of TW

- Relatively OK fit
- Inconsistencies of the fit with data are visible
- Fit formula:
  - $A + (Bx + C)/(x-K)^2$
  - equivalent to
  - $A + B/(x-K) + D/(x-K)^2$

TOF0 P10 SI2 PMT0

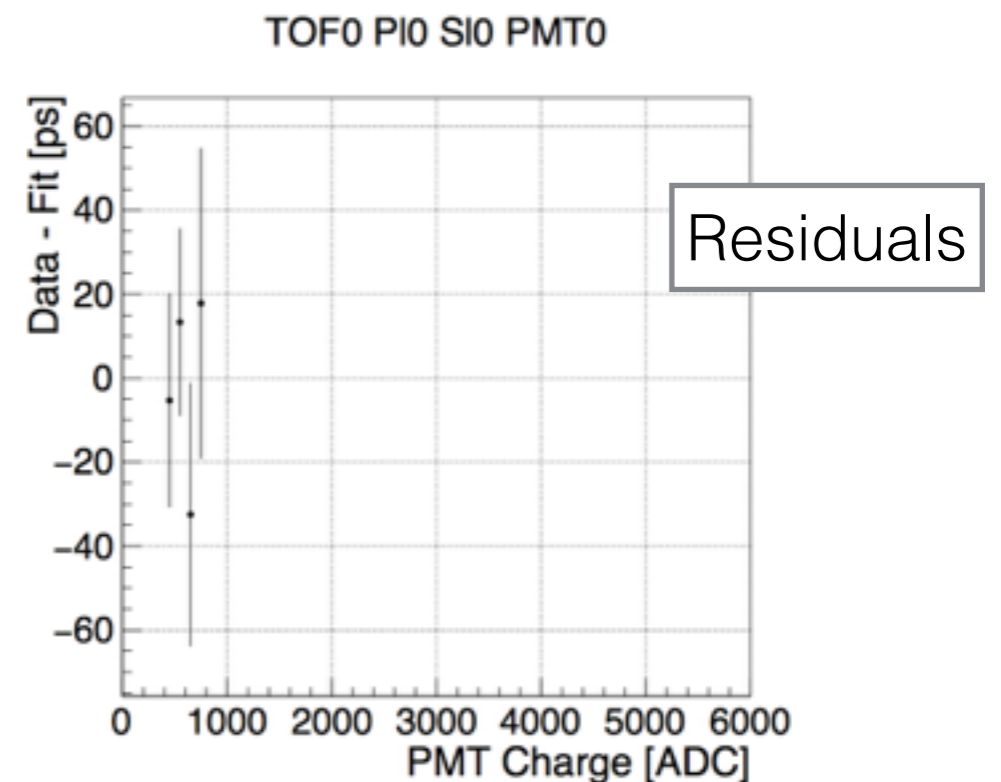
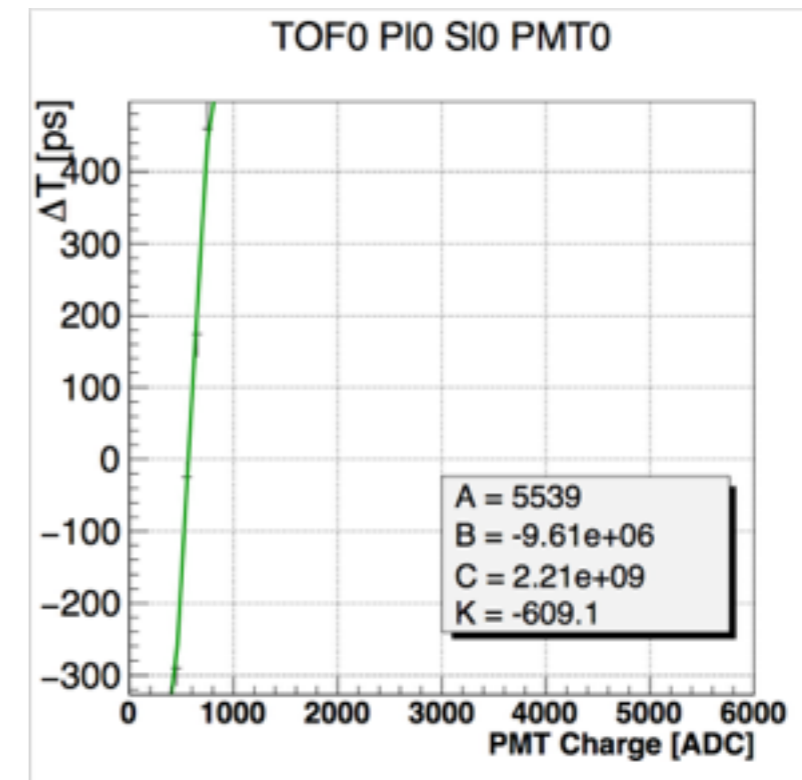


TOF0 P10 SI2 PMT0



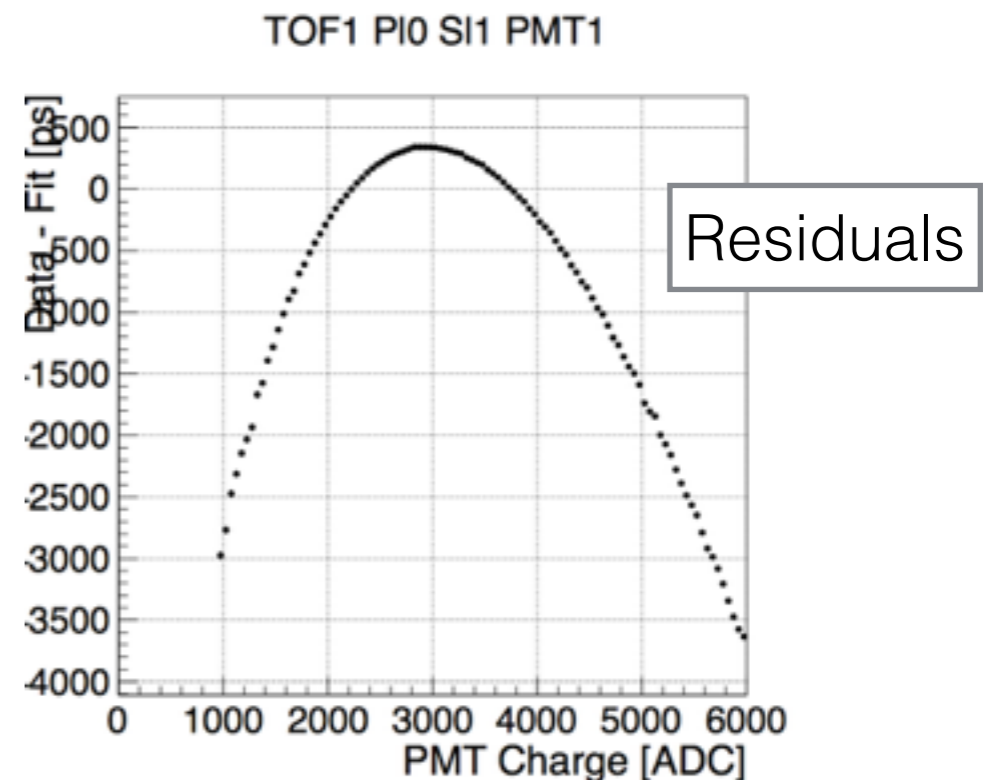
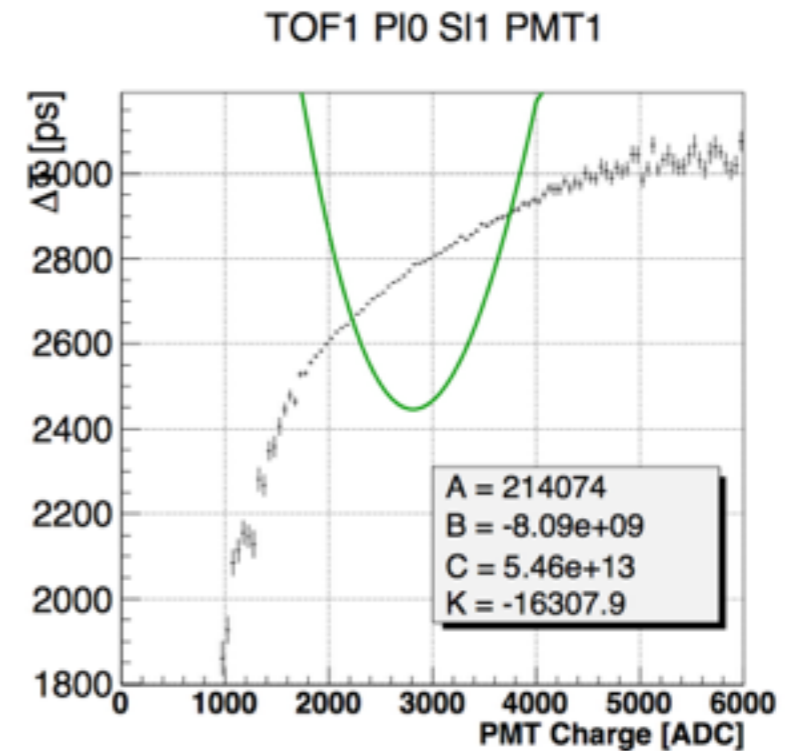
# Examples of TW

- Low statistics/short range in ADC



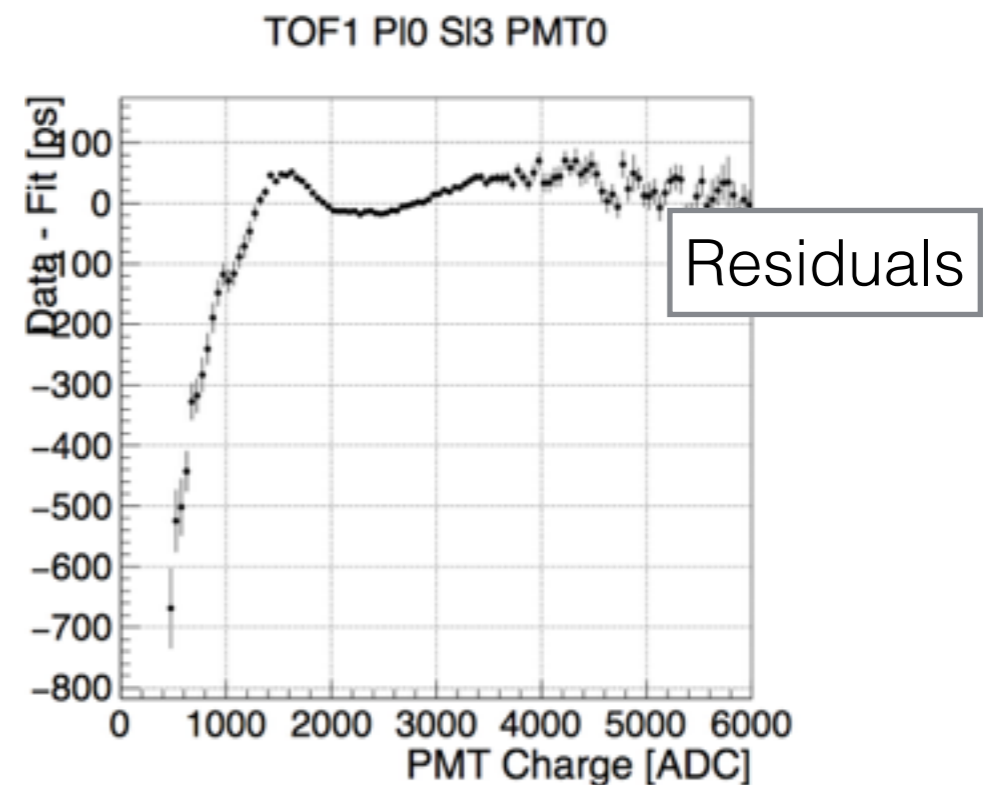
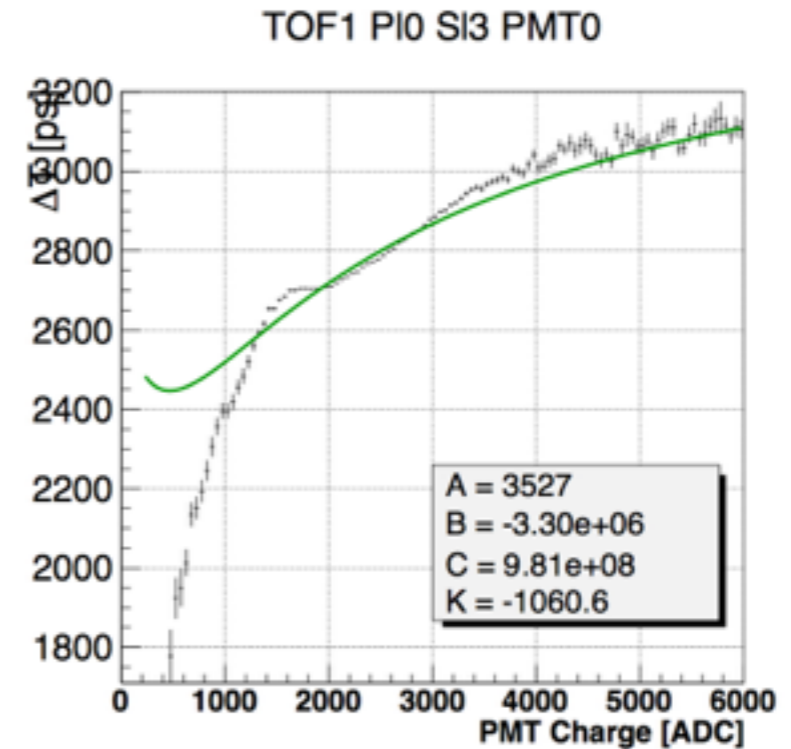
# Examples of TW

- Unsuccessful fit
- notice the shape of the TW curve



# Examples of TW

- Another example of a strangely shaped TW curve

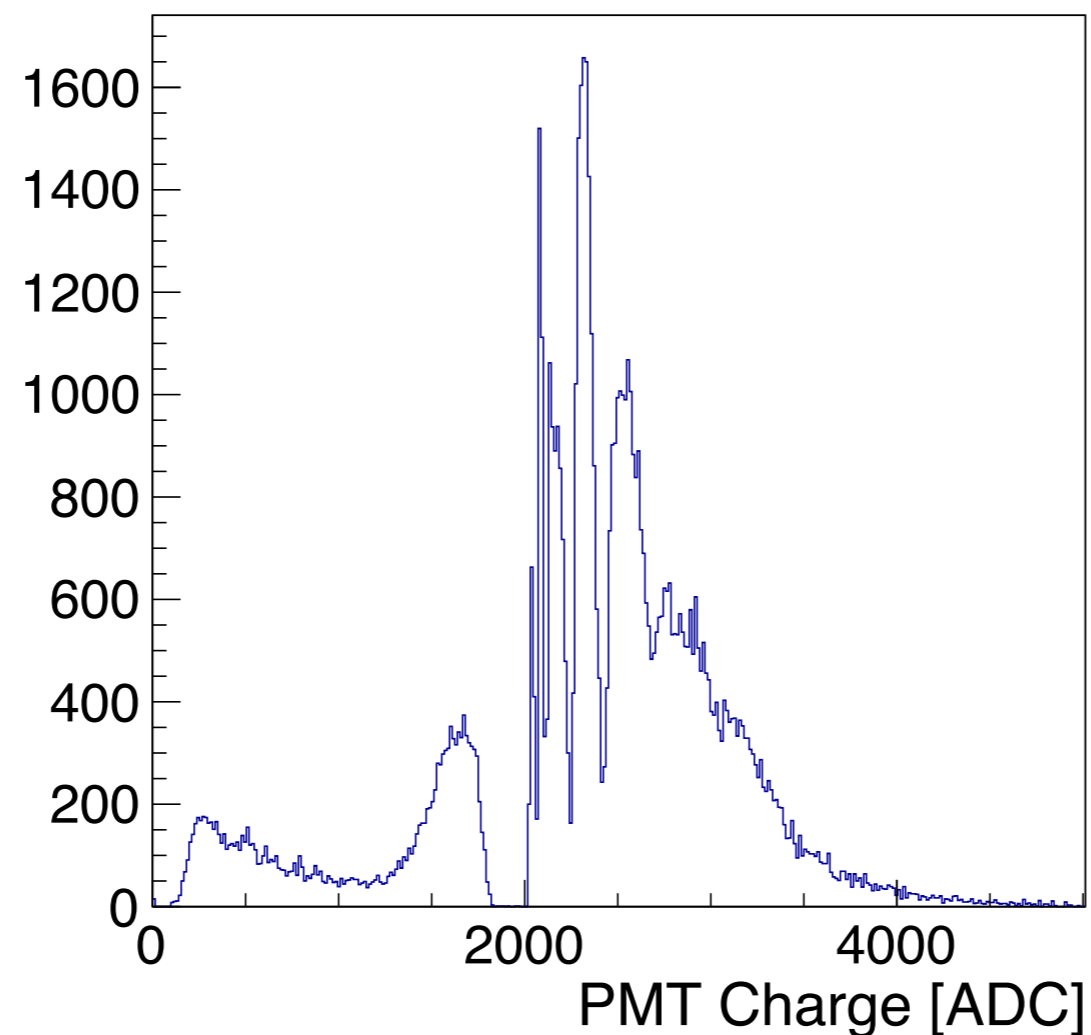




# Bad Channel

- TOF1-Plane 0-Slab 4-PMT 0
- Apparent dead area in the channels ADC

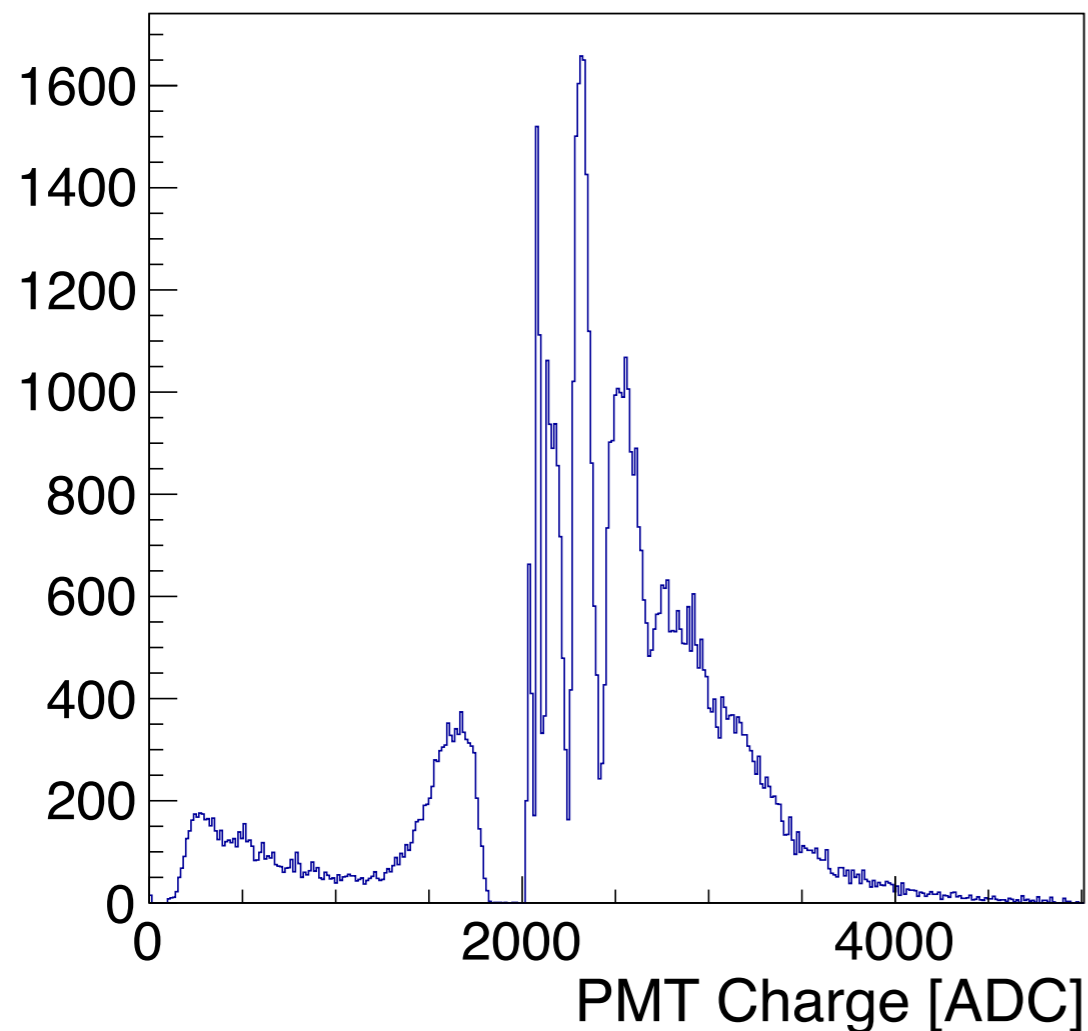
TOF1 PI0 SI4 PMT0



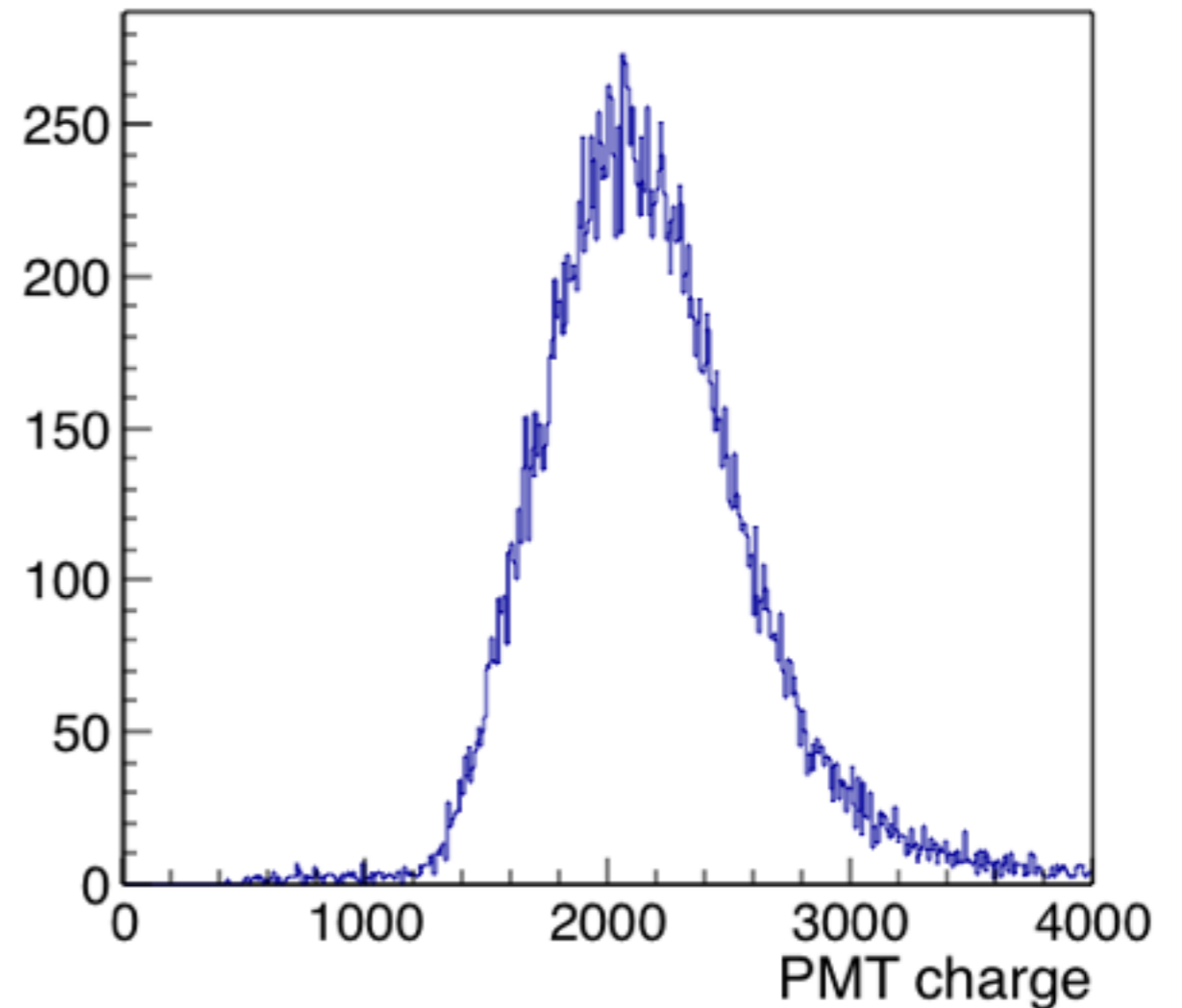
# Example Good Channel

- Very different ADC distribution

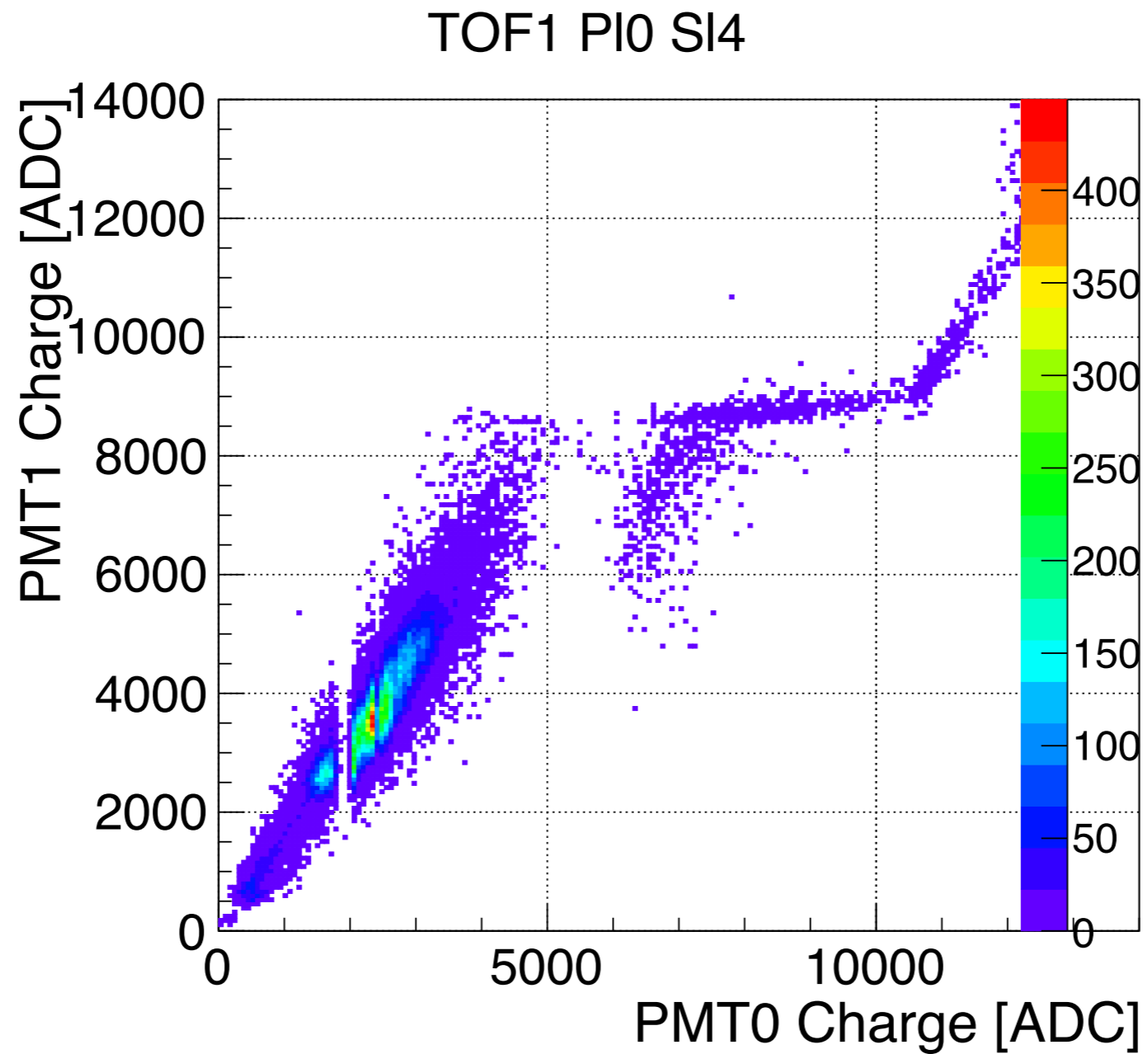
TOF1 PI0 SI4 PMT0



TOF1, Slab H3, PMT0



# Bad Ch. - PMT1 vs PMT0



# Bad Ch. - PMT1 vs PMT0

## Muon events

Muons Only, TOF1 PI0 SI4

