

C-Det Crosstalk Analysis

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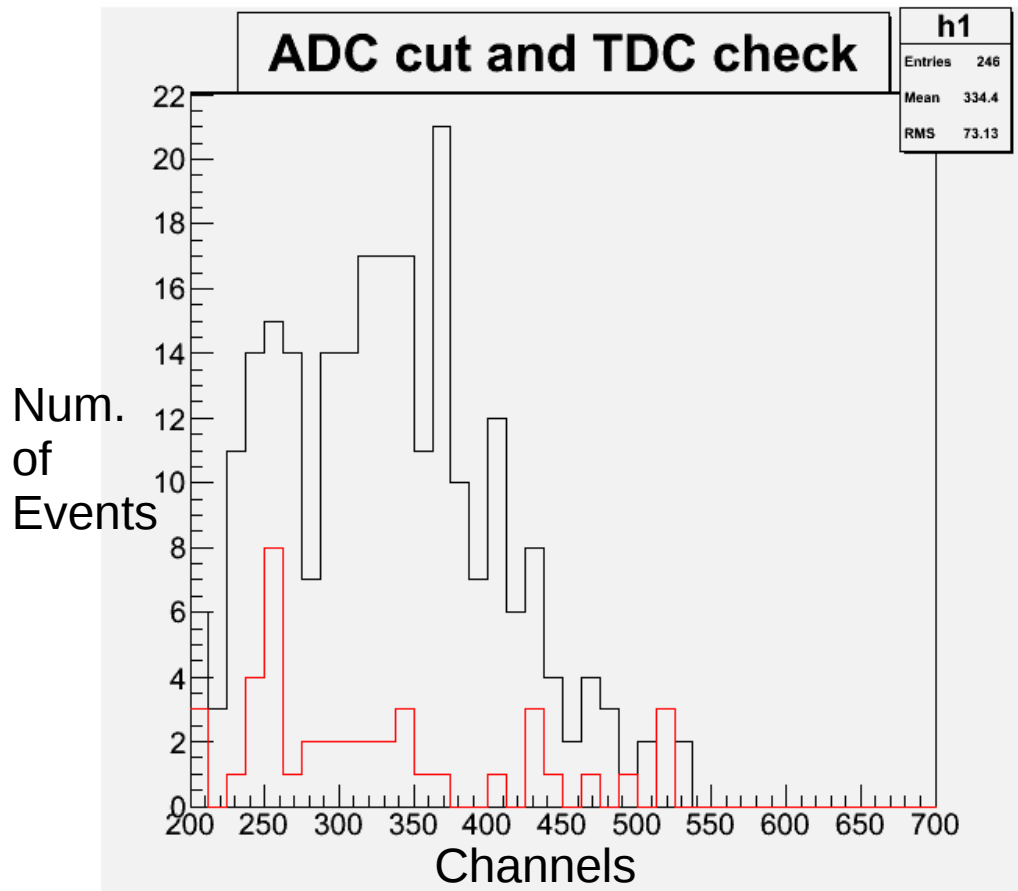
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Define Cuts

- ADC spectrum cut defined on adjacent paddles as having no signal (<10) and in signal paddle with large amplitude of channels (>200)
- To test for crosstalk, check for large TDC value (>500) firing in adjacent paddle not from signal paddle
- High voltage for PMT set to 775V. Then reduced to 750V.

Ex. PMT #7 Pixel #13

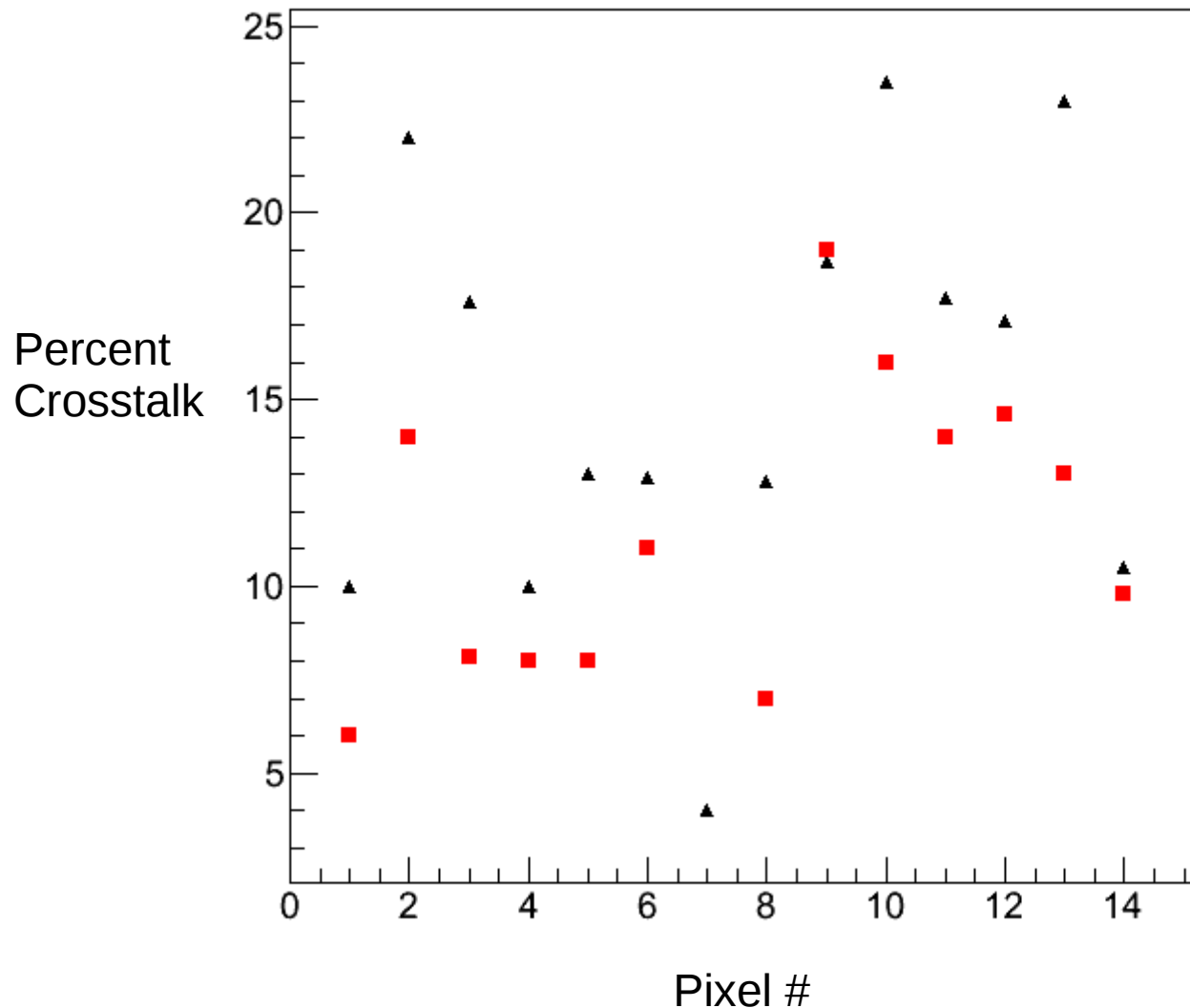


- Black – ADC > 200
Adj. ADCs < 10
• Num. Of Events: 246
- Red – ADC > 200
Adj. ADC < 10
Adj. TDC > 500
• Num. Of Events: 42
(17.1%)

Ideally Red events should be ~ 0.

PMT #7: % Crosstalk per Pixel

Percent crosstalk of adjacent pixels



Black – PMT set at 775V

Red – PMT set at 750V

Only analyzes effects of adjacent paddles in scintillating bar.

Further analysis needed to see crosstalk effects of all pixels in PMT.

Going Forward

- Gathering more statistics ($1e6$ events)
- Further reduction of High Voltage
- Investigating regions of high cross talk percentages (opening up the detector)