

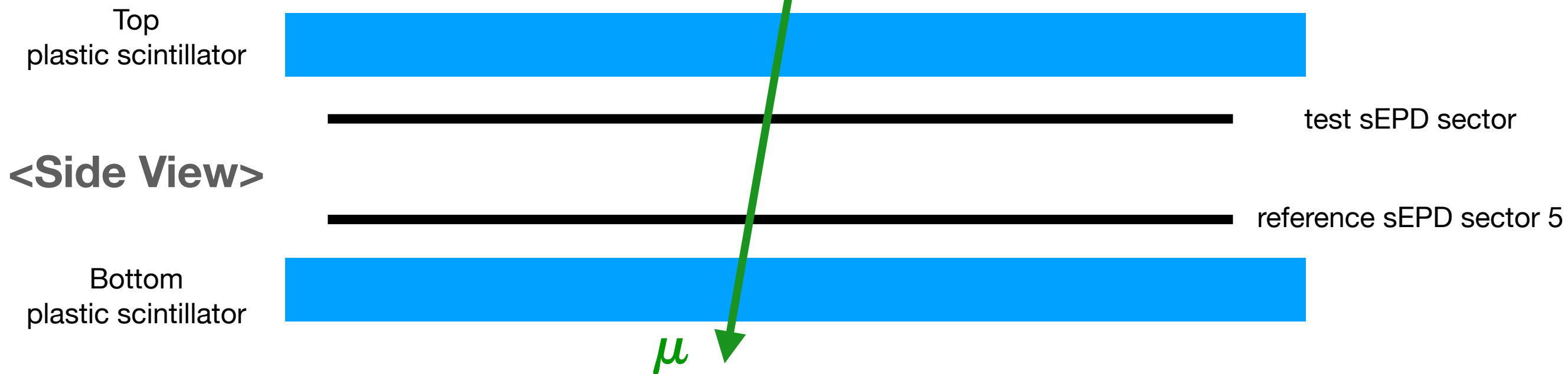
# SEPD cosmic test

(with fixed SiPM)

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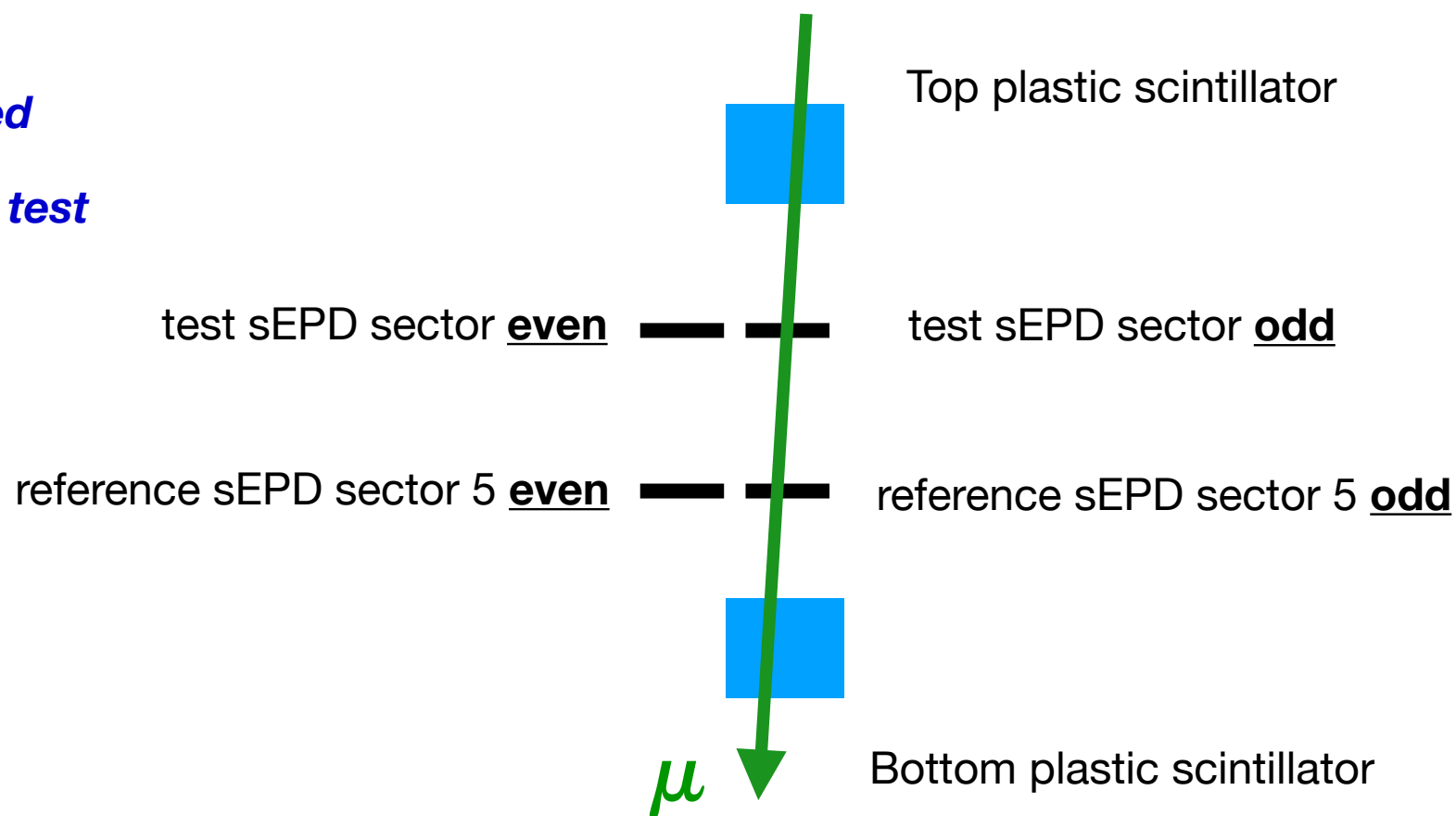
# Cosmic ray test



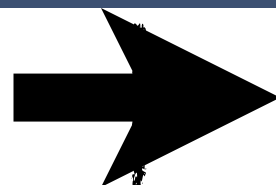
\*\*\* *Distance b/w scintillators & distance b/w sectors reduced*

\*\*\* *Still need ~1day for 1 sector test – to have enough stats*

<Front View>



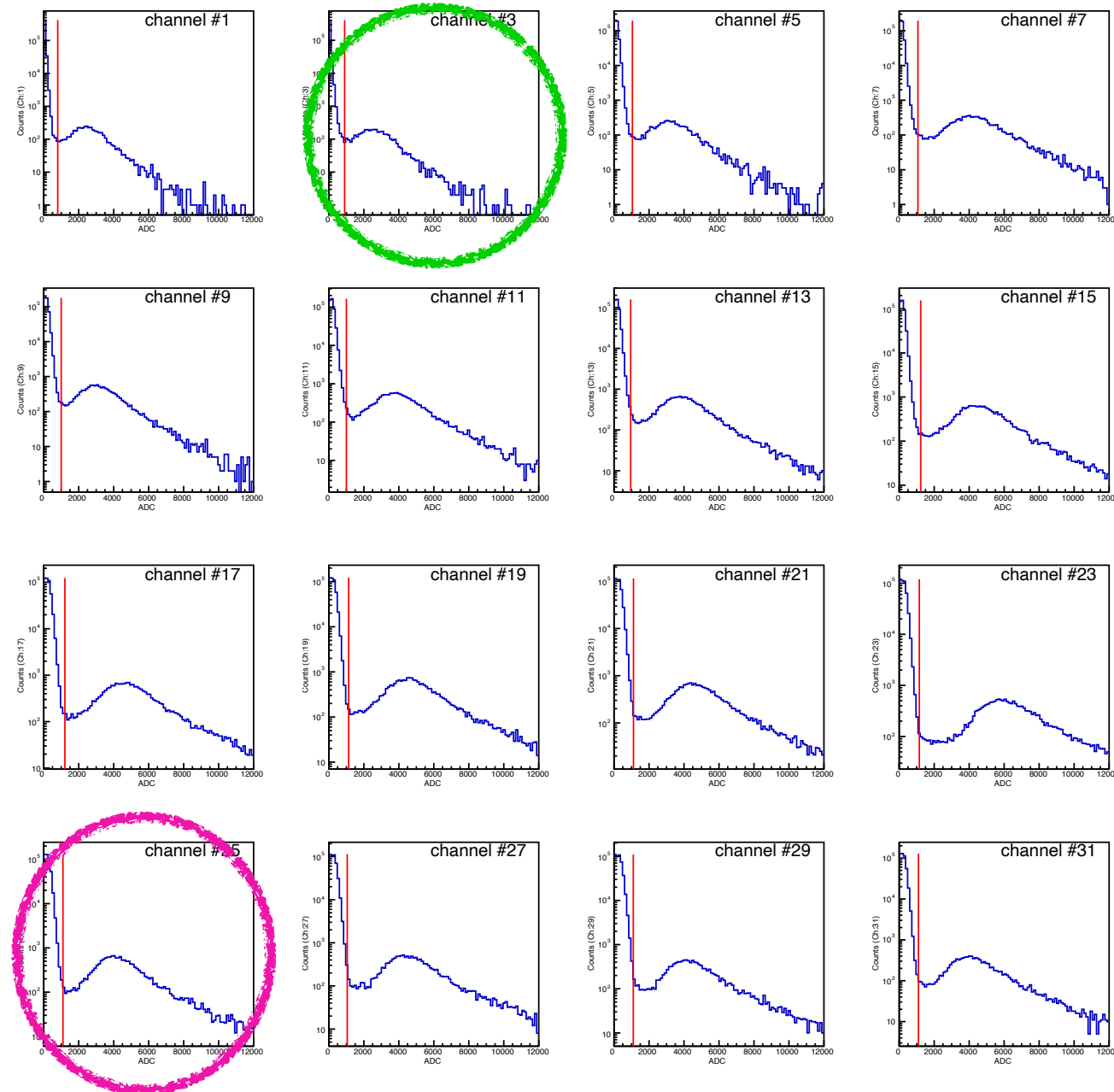
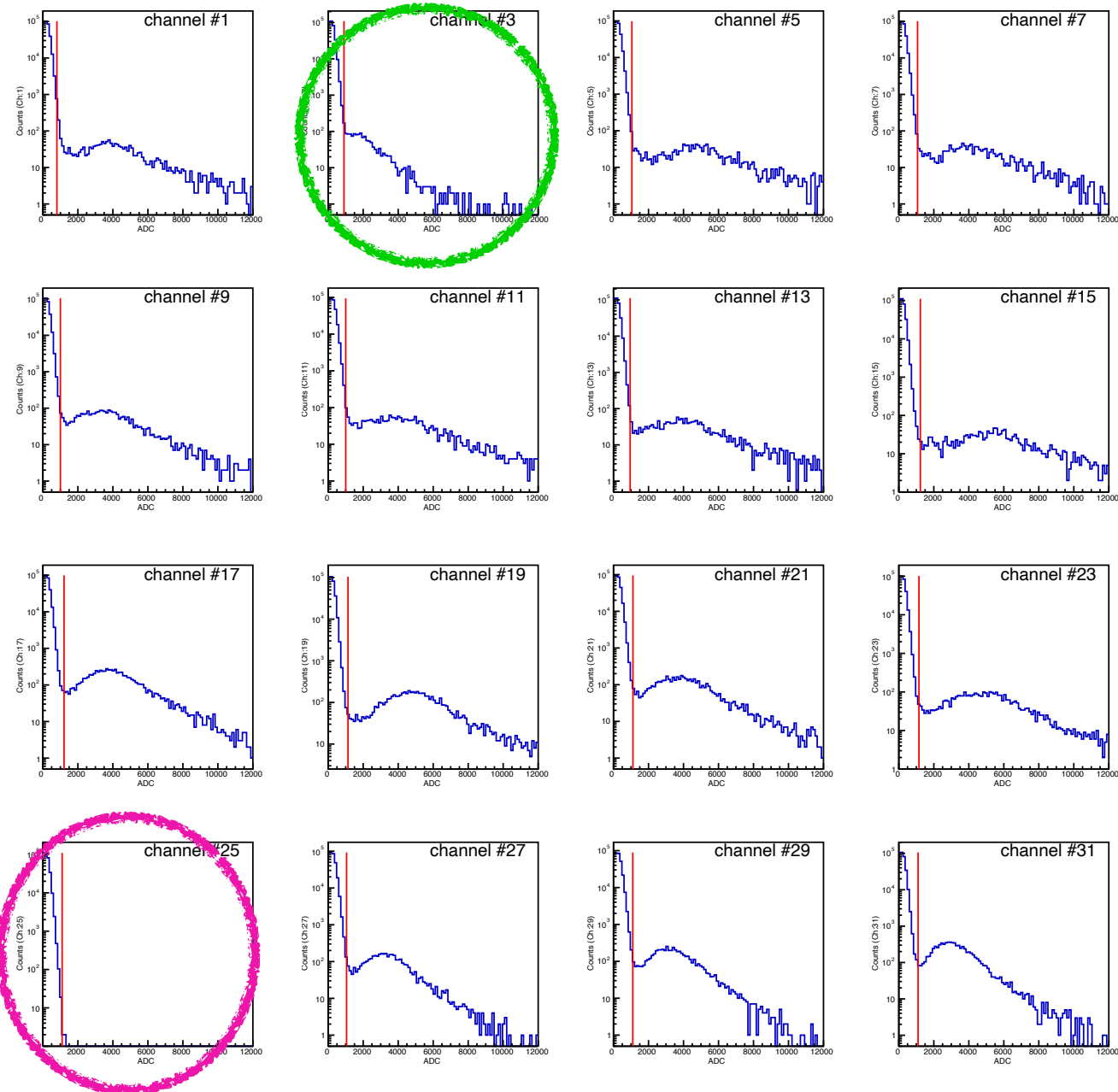
## Sector #5 Before



## Sector #5 After

Reference Sector #5 raw

Reference Sector #5 raw

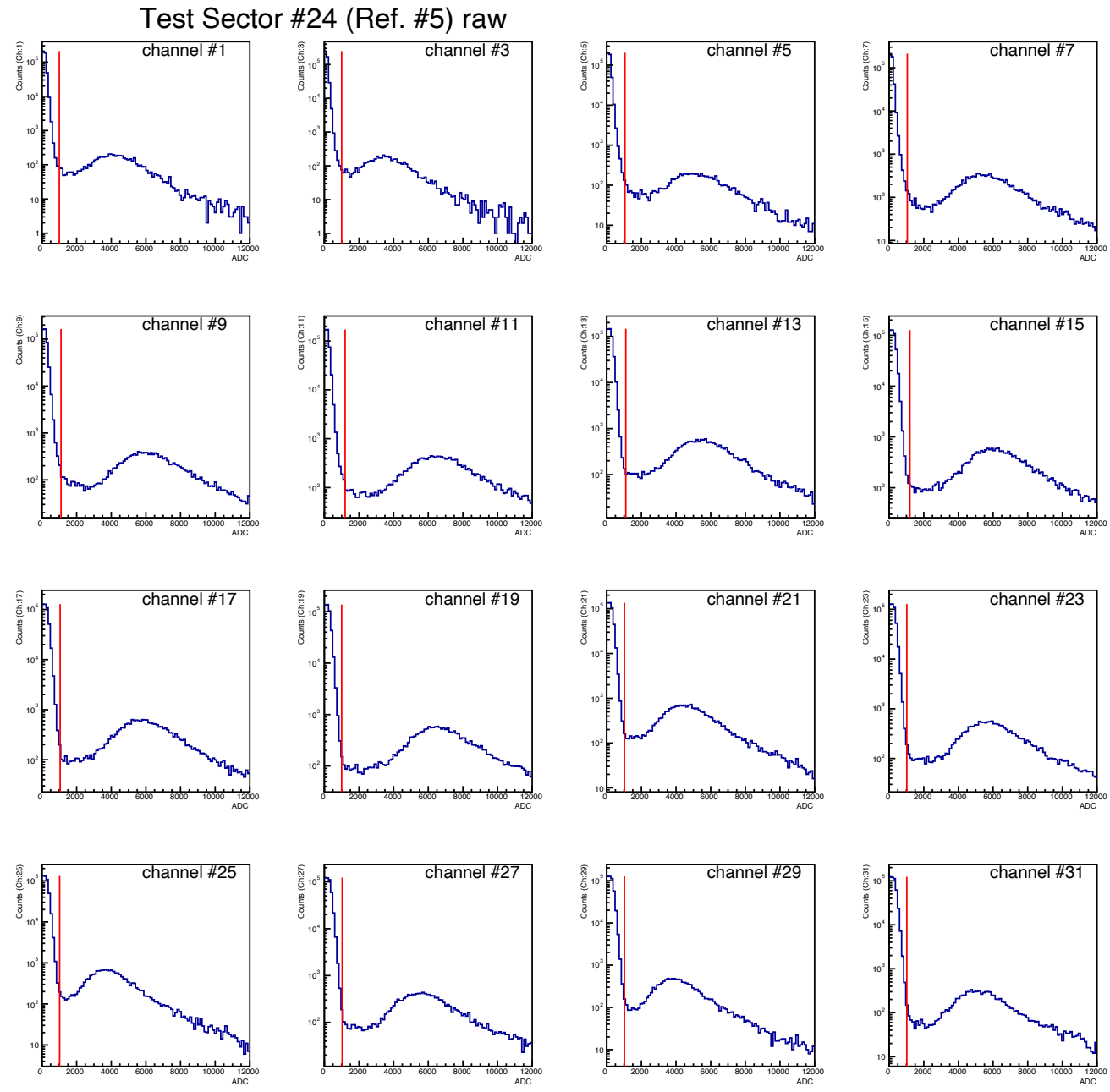
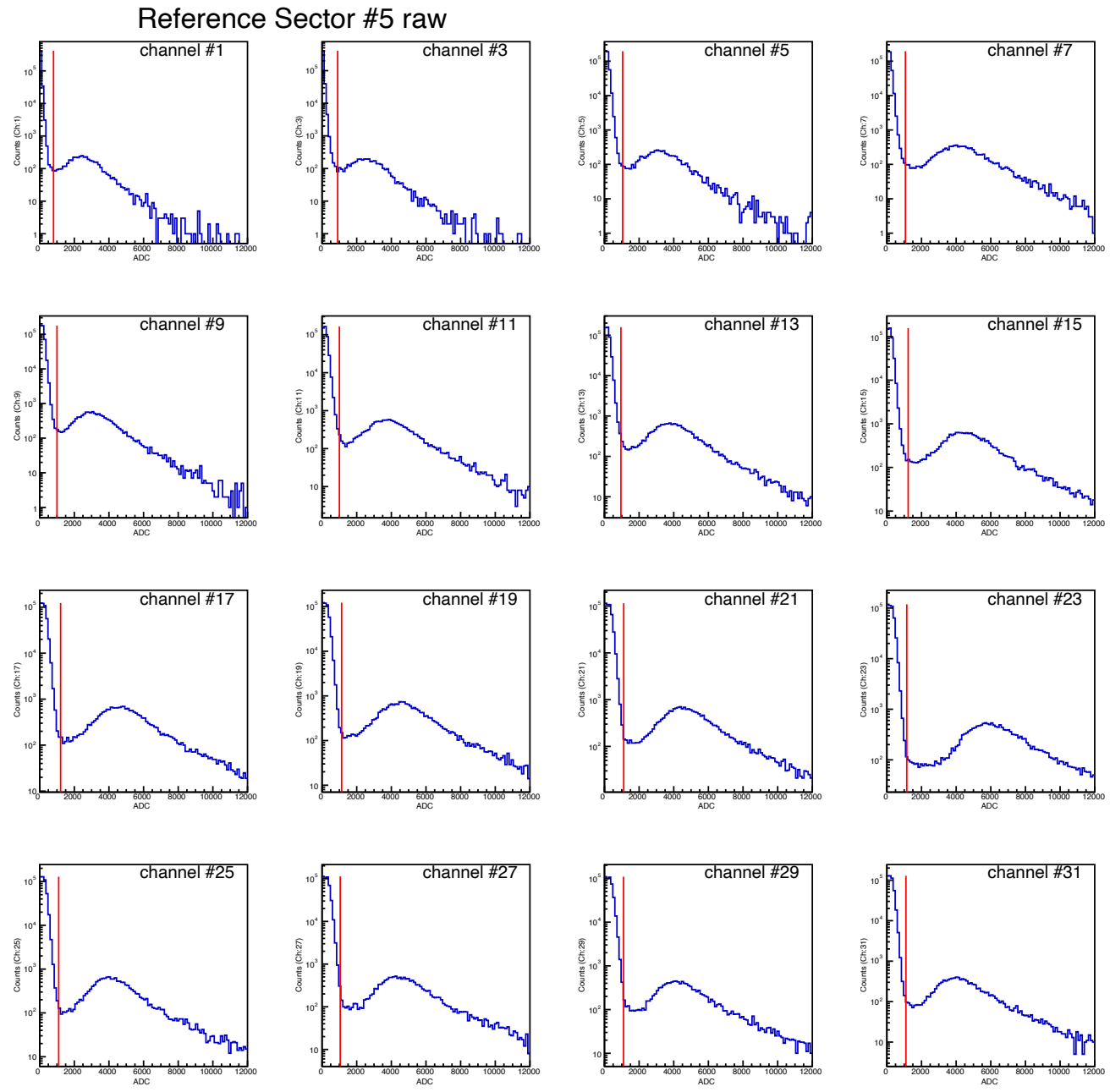


- SiPM fixed (channel 3)
- Problem before..?

\*Red lines  
: pedestal cut optimized for each channel

## Reference Sector #5

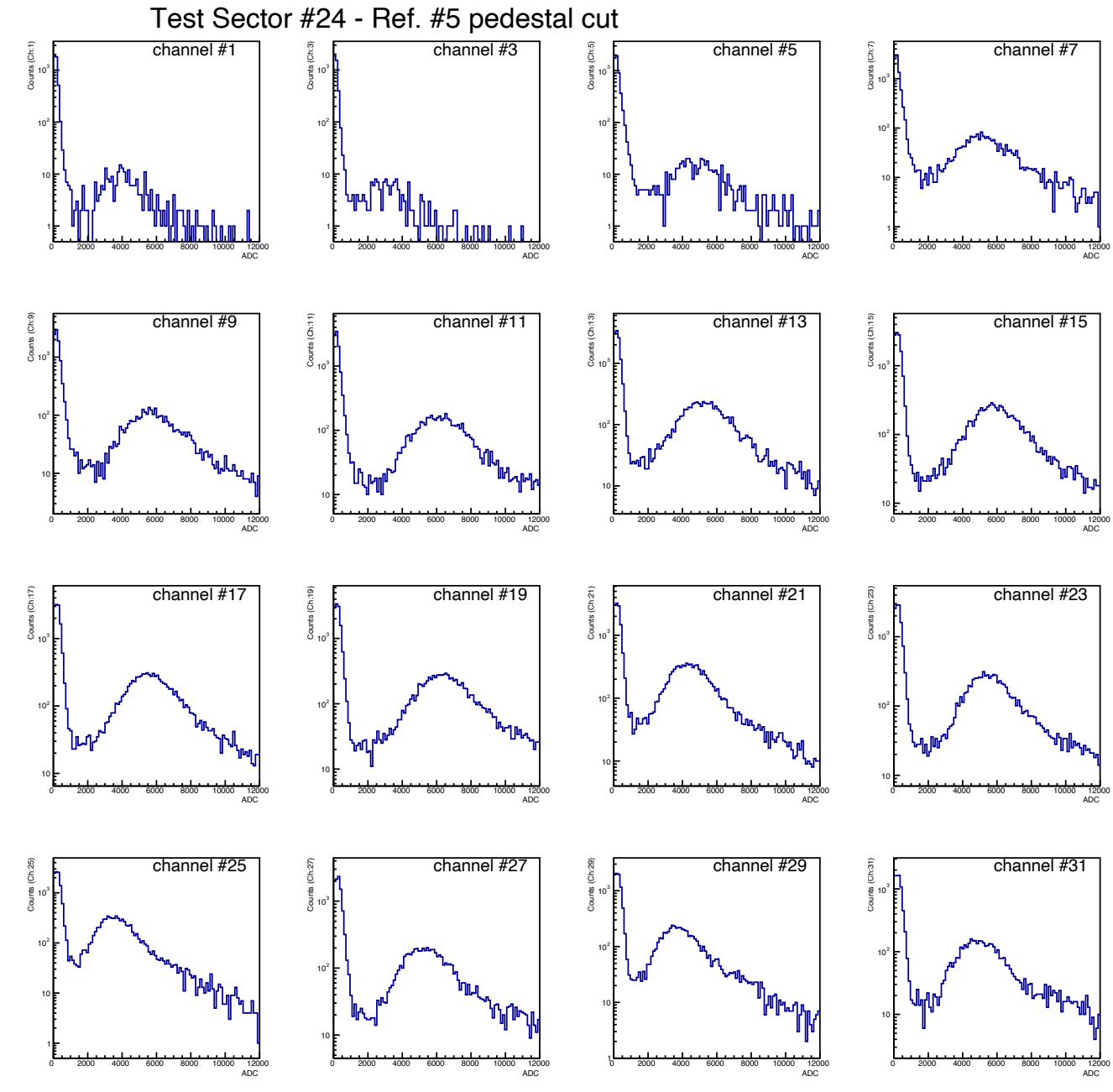
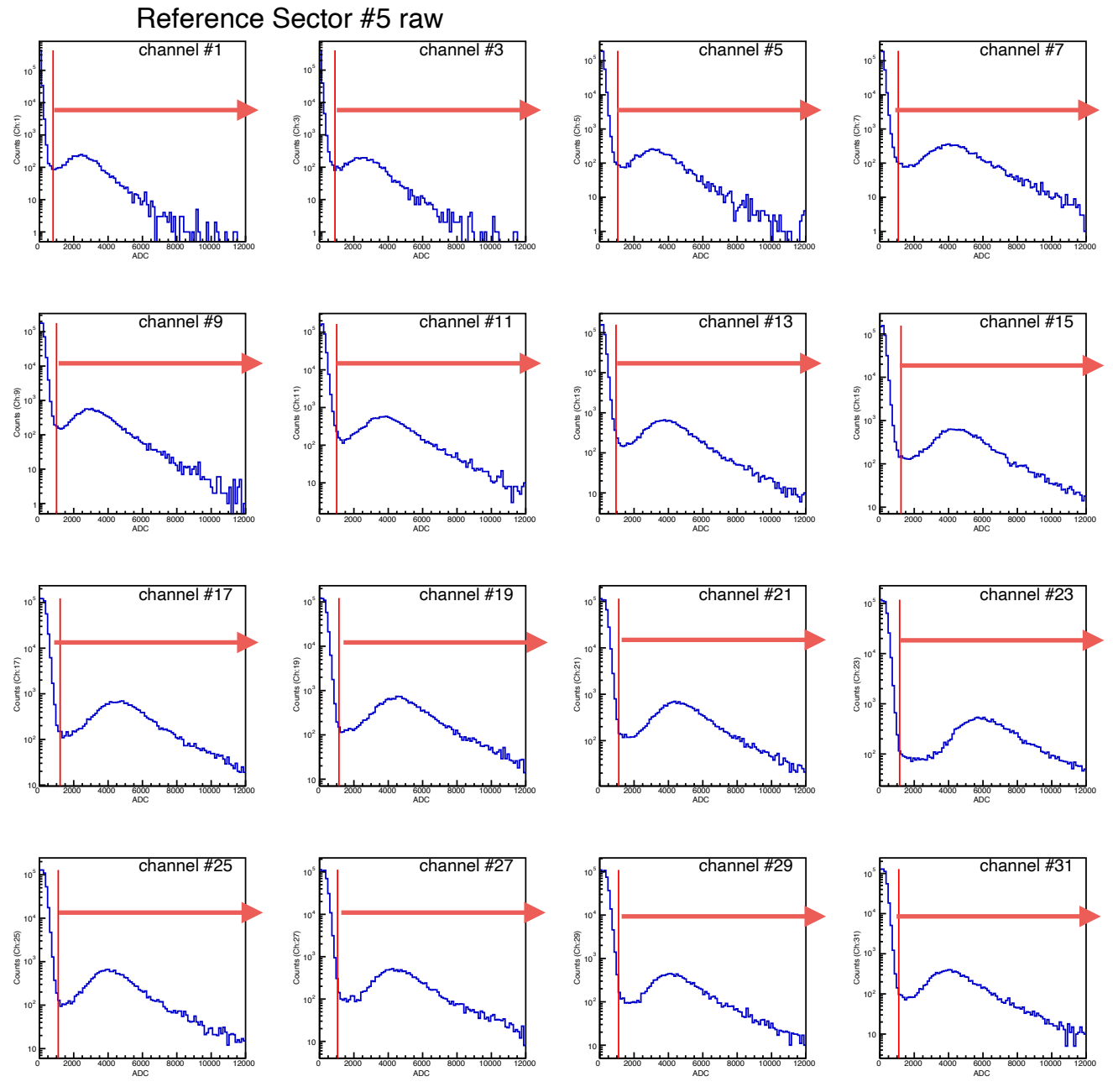
## Test Sector #24



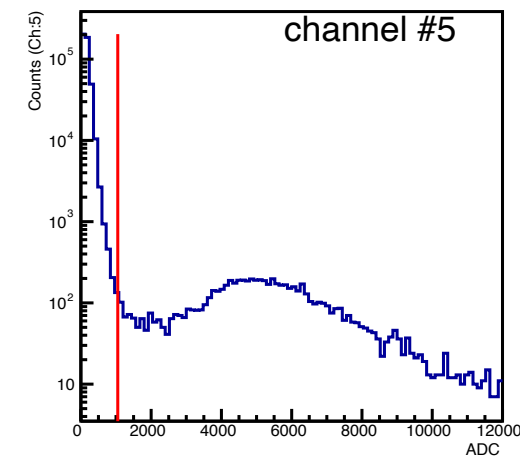
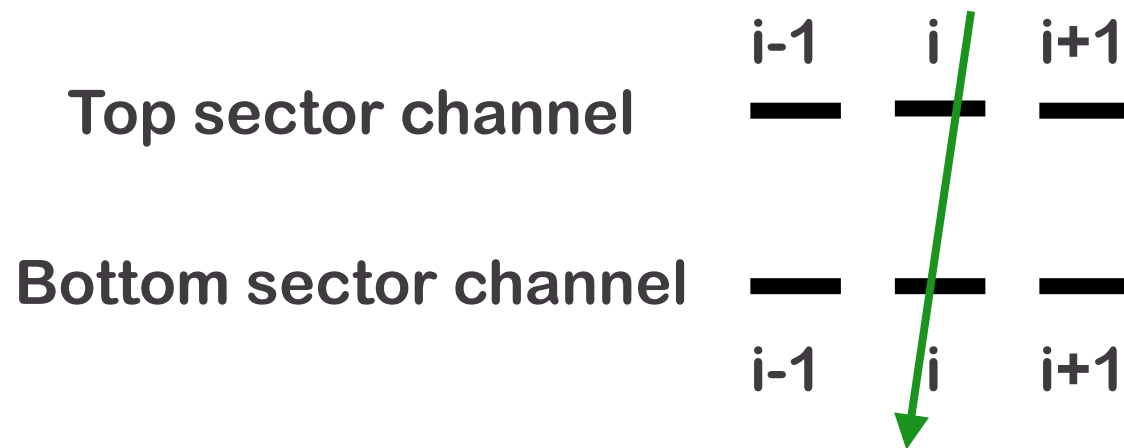
- Raw distribution of odd channels in reference and test sector

## Reference Sector #5

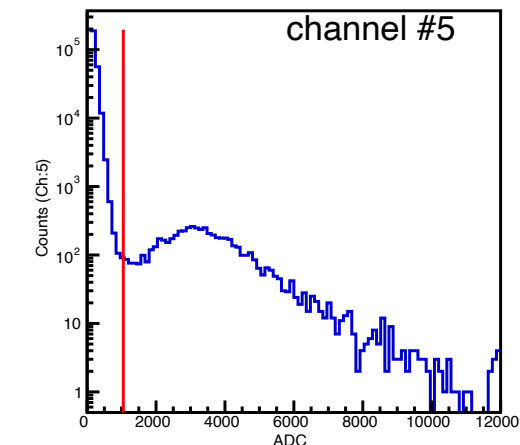
## Test Sector #24



- Raw distribution of odd channels in reference and test sector
- Response after applying pedestal cut on corresponding vertical channels in reference sector



Top (raw)



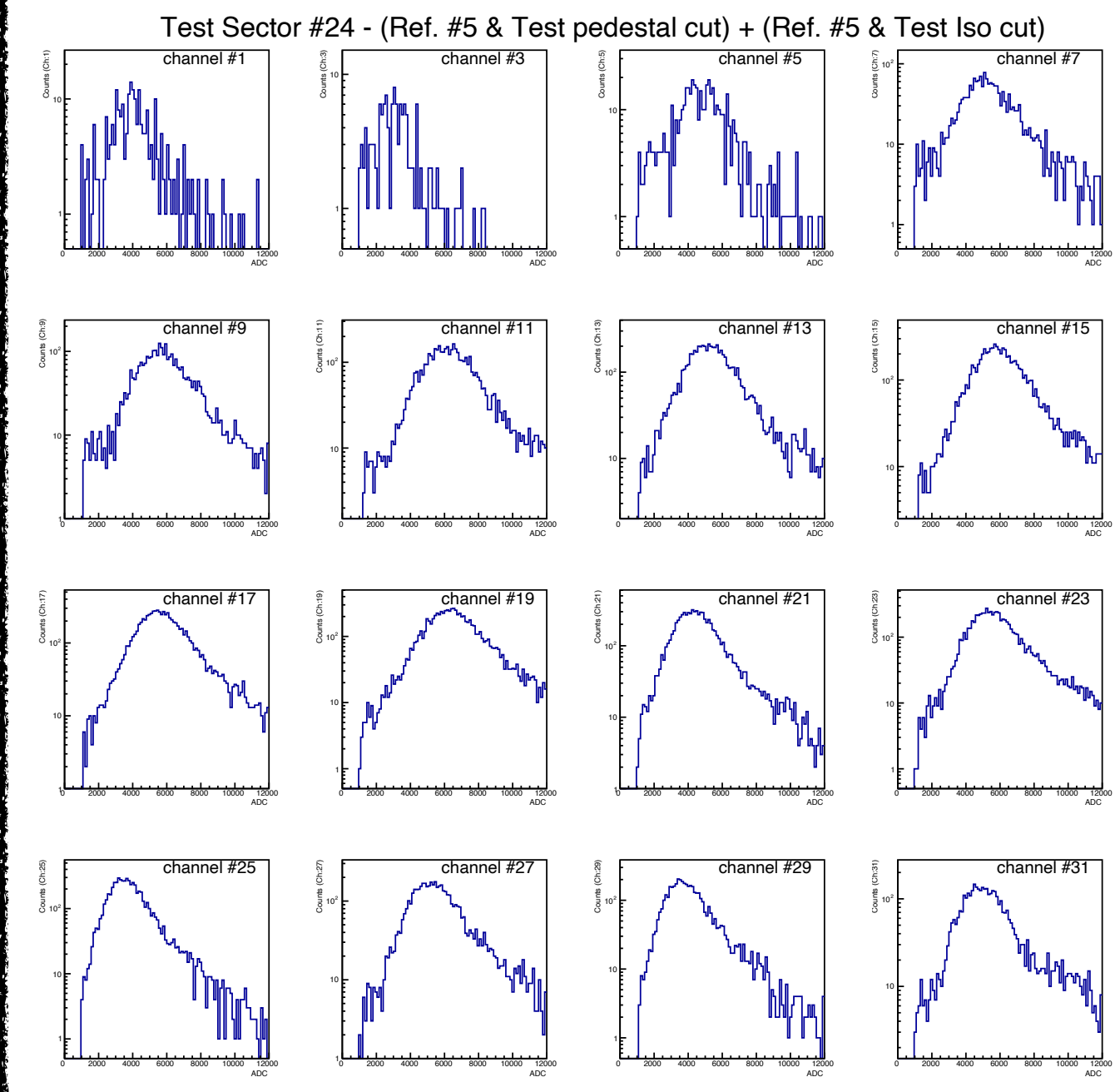
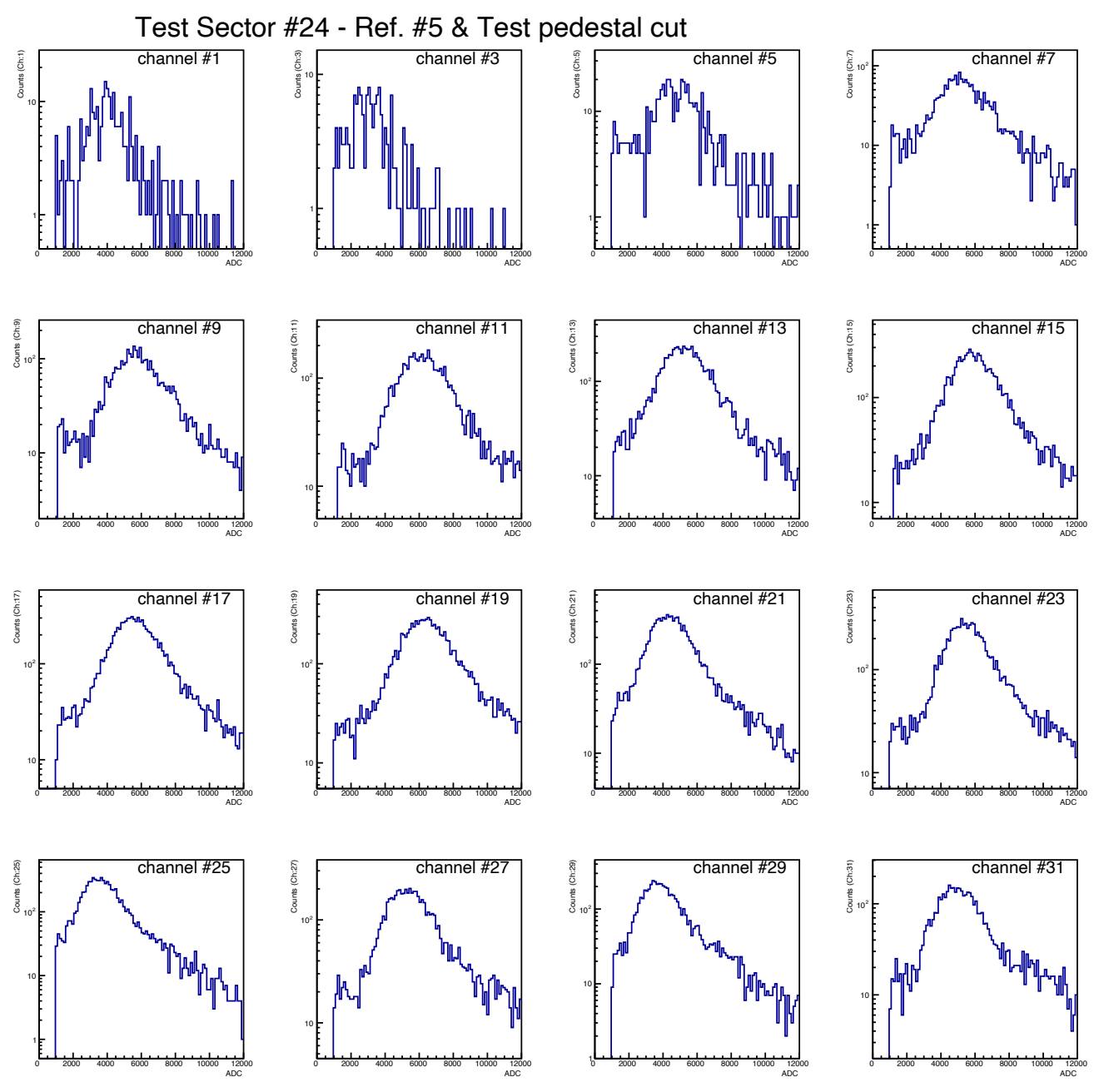
Bottom (raw)

- Coincidence cut : Channel ' $i$ ' ADC > pedestal in both bottom and top sector
- Isolation cut : Nearby channels ' $i+1$ ' & ' $i-1$ ' ADC < pedestal in both bottom and top sector

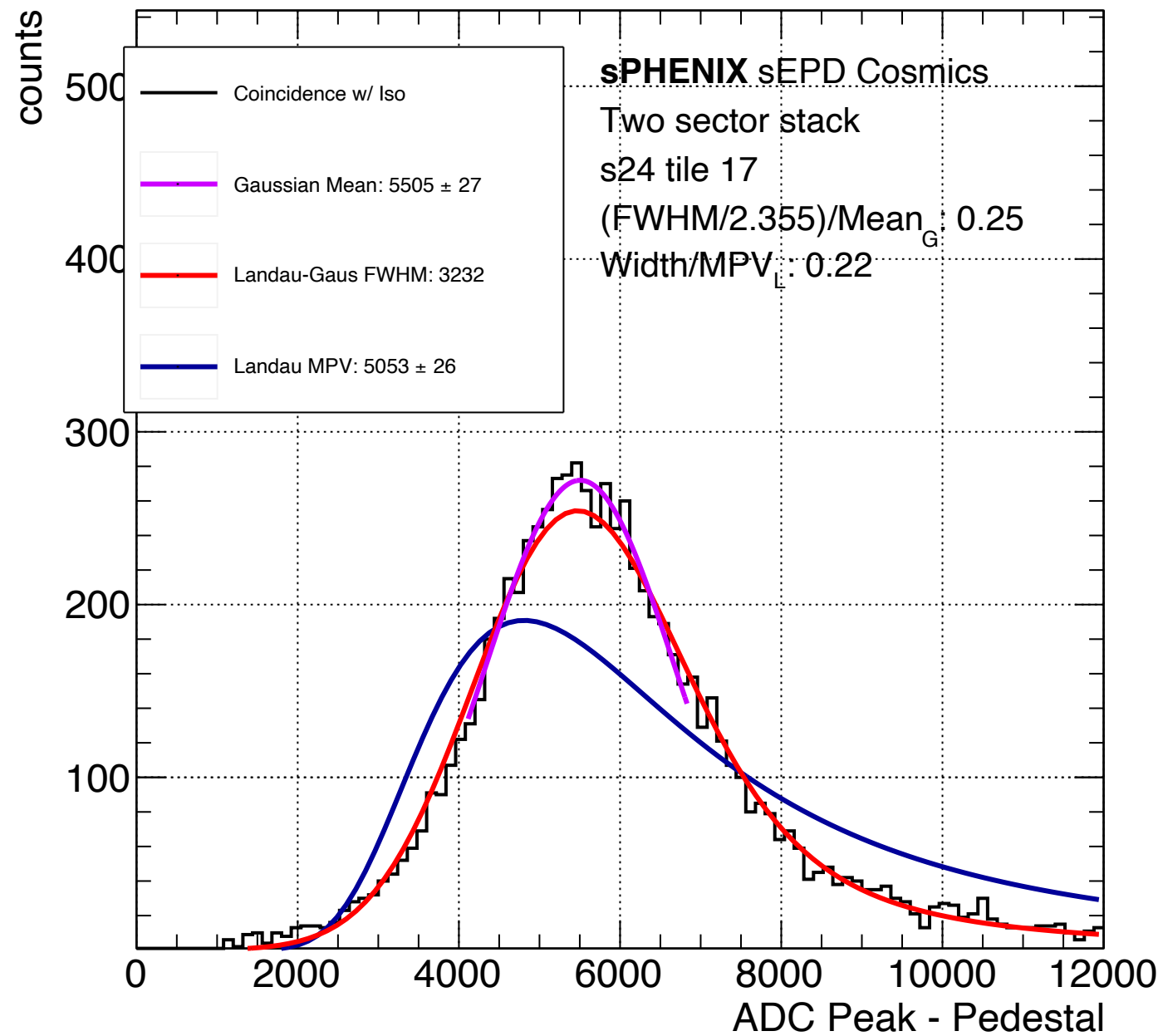


## Top sector 24 coincidence cut

## Top sector 24 coincidence & isolation cut

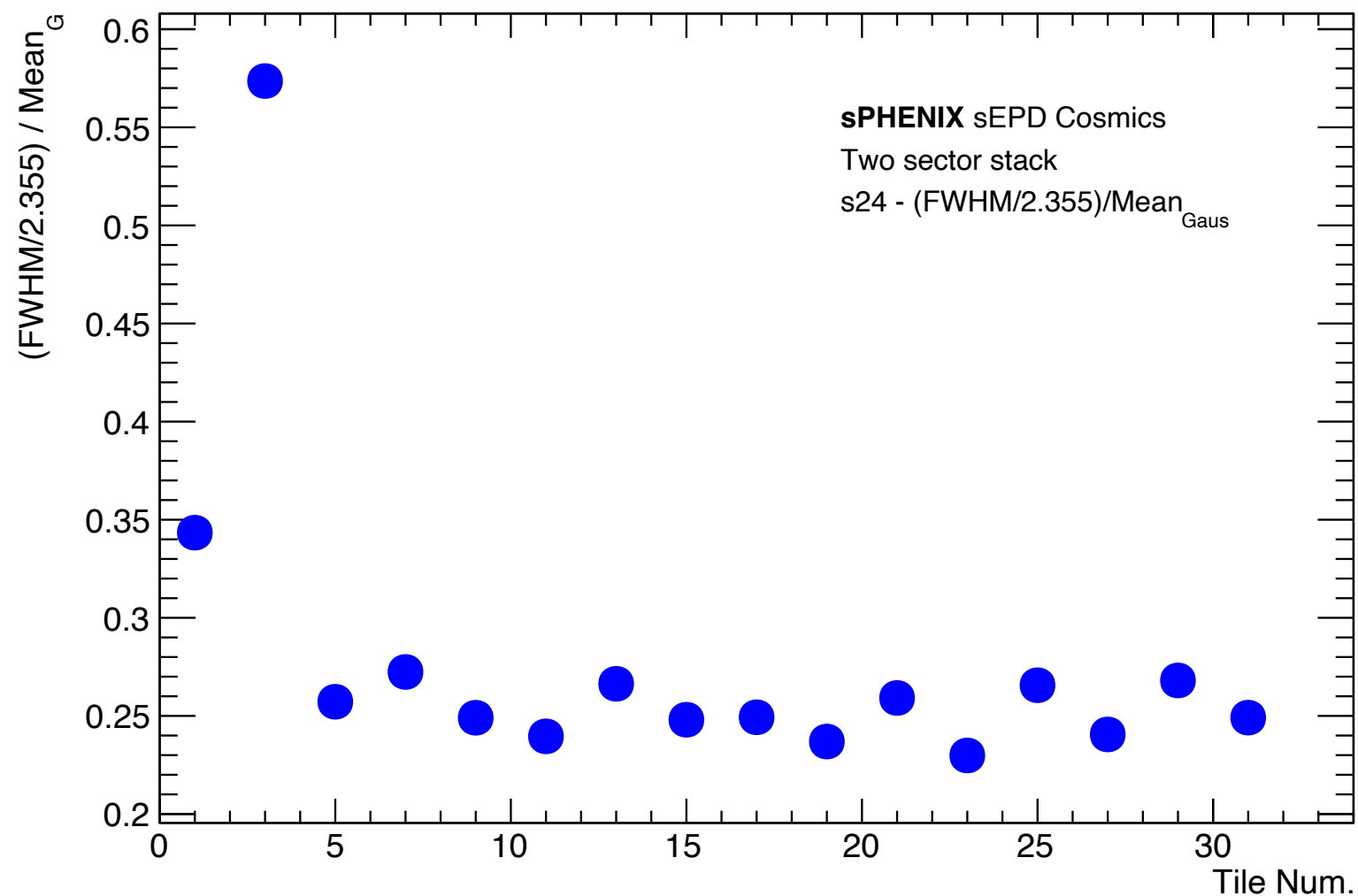


- Isolation cut smoothen MIP shape (coincidence already doing a good job)



- Example of fit to coincidence & isolation cut applied ADC distribution
- Landau & Gaussian convolution fit – extract FWHM

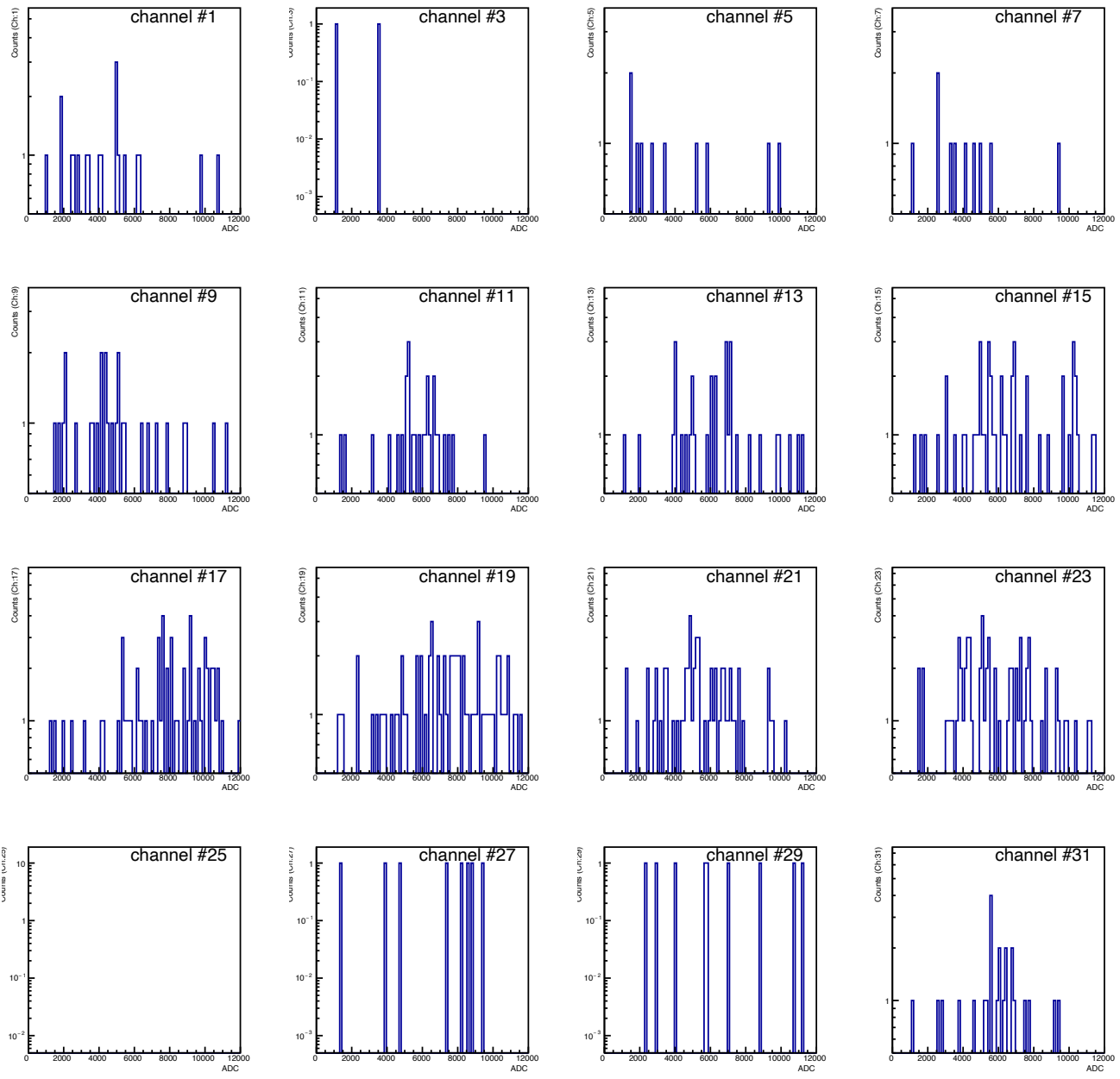




- FWHM based on fits – Need some investigation on channel 3...

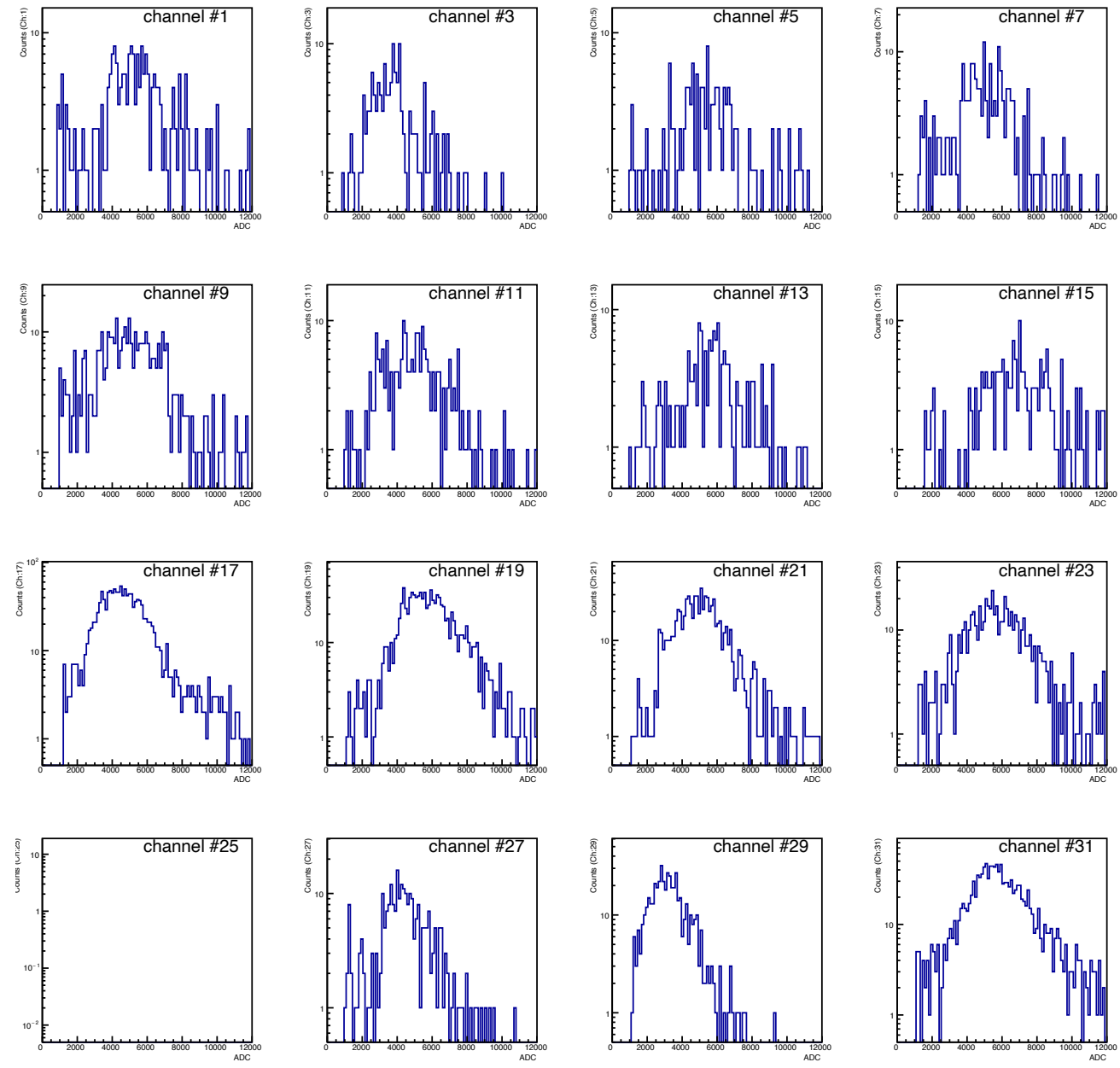
## Top sector 12

Test Sector #12 - (Ref. #5 & Test pedestal cut) + (Ref. #5 & Test Iso cut)



## Top sector 15

Test Sector #15 - (Ref. #5 & Test pedestal cut) + (Ref. #5 & Test Iso cut)



- Sector 12 lack of stats? Sector 15 OK?
- Something was wrong with channel 25...

- New test with reduced distance of both scintillators (trigger) and sEPD sectors
- Keep test the remaining sectors (odd side)
- Thinking of 'html' documentation for comfortable access
- Revisit carefully old tests including the ones from last year
- Schedule for the following 2-3 weeks and switch to even side (depends on how many retests we need to do)