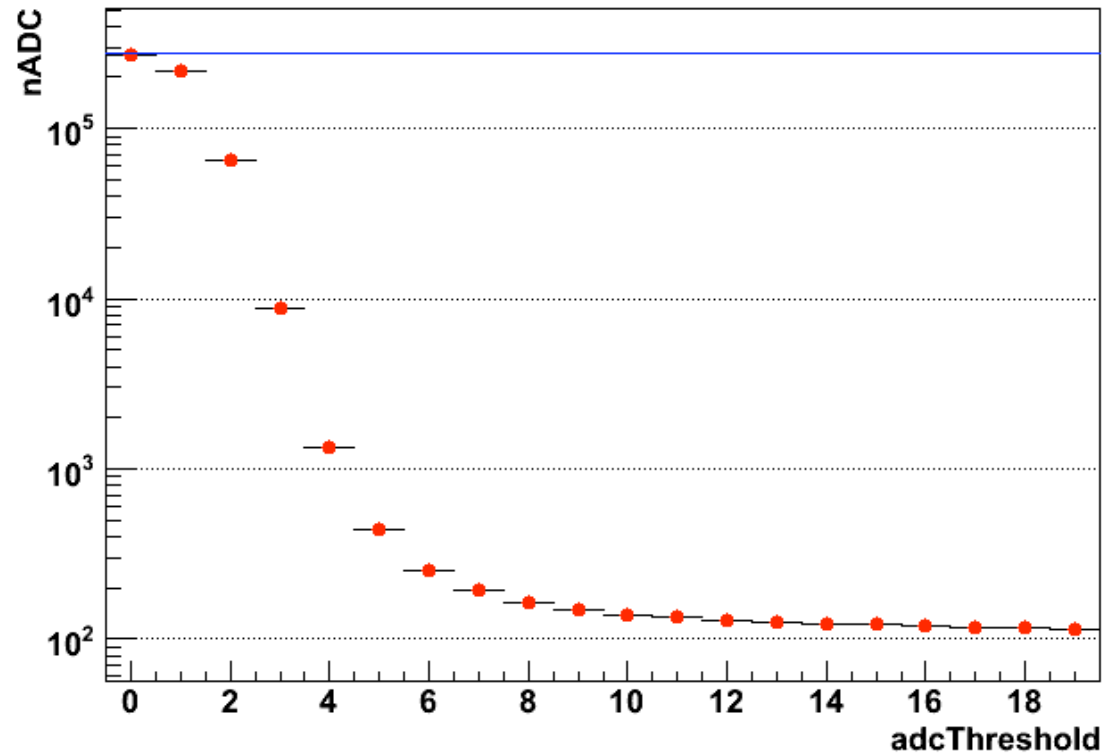


Number of Activated channels vs. ADC threshold(noise run)

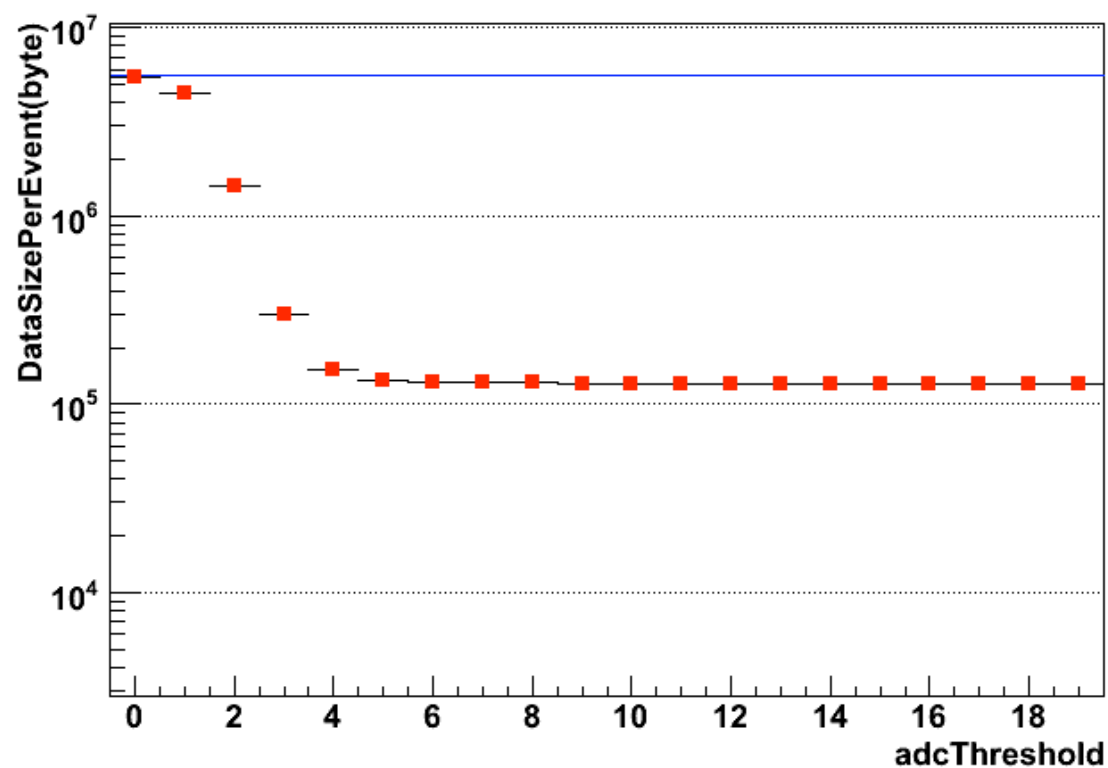


- $Q(i) > \text{adc threshold}$, write 3 ADC channels for all time bins(so called neighbor sensitive)
- Base line 10 is already subtracted
- blue line indicate the number of adc channels of nzs data
- Same type of study which Sylwester shown in the commissioning meeting
- <http://indico.cern.ch/conferenceDisplay.py?confId=36952>

Header Words Size

- Per equipment
 - ▶ GTU header 32 bit words
 - ▶ 1 + 68 (example) = 69 words (will vary)
 - ▶ 5 stacks * 8 words = 40 words
 - ▶ per half chambers
 - ▶ tracklet words ~ 2 words (noise data should be 0 but give big number)
 - ▶ tracklet end marker words = 2 words
 - ▶ hc header words = 2 words
 - ▶ data end marker words = 2 (or 4)? words
 - ▶ per mcm
 - ▶ mcm header words = 1 words
 - ▶ adc mask words = 1 words
- total number of header words per super module for ZS data
 - ▶ $[69+40] + [48*(2+2+2+2 + 16*4*2) + 12*(2+2+2+2 + 16*3*2)] = 7885$ words
- total number of header words per super module for NZS data
 - ▶ $[69+40] + [48*(2+2+2+2 + 16*4*1) + 12*(2+2+2+2 + 16*3*1)] = 4237$ words

Data Size vs. ADC threshold (4 SMs)



- Header Size per event:
 - for ZS data = $7885(\text{words}) * 4(\text{sm}) * 4(\text{byte}) \sim 126 \text{ KB}$
 - for NZS data = $4237(\text{words}) * 4(\text{sm}) * 4(\text{byte}) \sim 68 \text{ KB}$
- threshold 5, we are already dominated by header size

Double check the calculation

- Non Zero Suppressed run data size per event (based on Run 49643)
 - ▶ From Log book: $3939(\text{MB})/740(\text{events})= 5.32\text{MB}$
 - ▶ From above count(blue line): $4237 \text{ header words per sm} * 4 \text{ sms} * 4 \text{ bytes} + 5 \text{ words} * 4 \text{ byte} * 275646 \text{ adcs} = 5.58\text{MB}$
 - ▶ 260KB mismatching due to missing HC (with reason)

(Number of Activated channels)/(Number of channels of NZS case)
vs. ADC threshold(noise run)

