

SK2,SK2A noise measurements in absence of injection signal

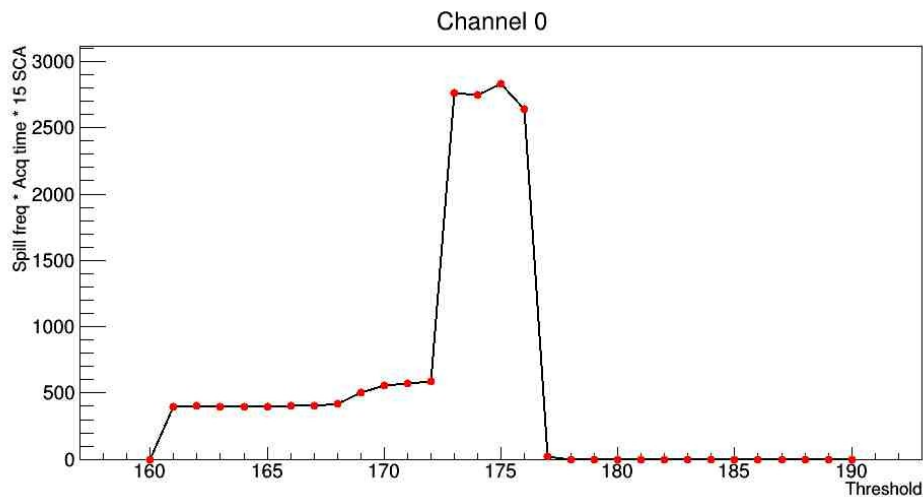
Artur Lobanov
Shriddha Chaitanya

Measurement conditions

- Acquisition time : 5 s
- Spill frequency : 40 Hz
- Slow clock : 2.5 MHz

SKIROC2

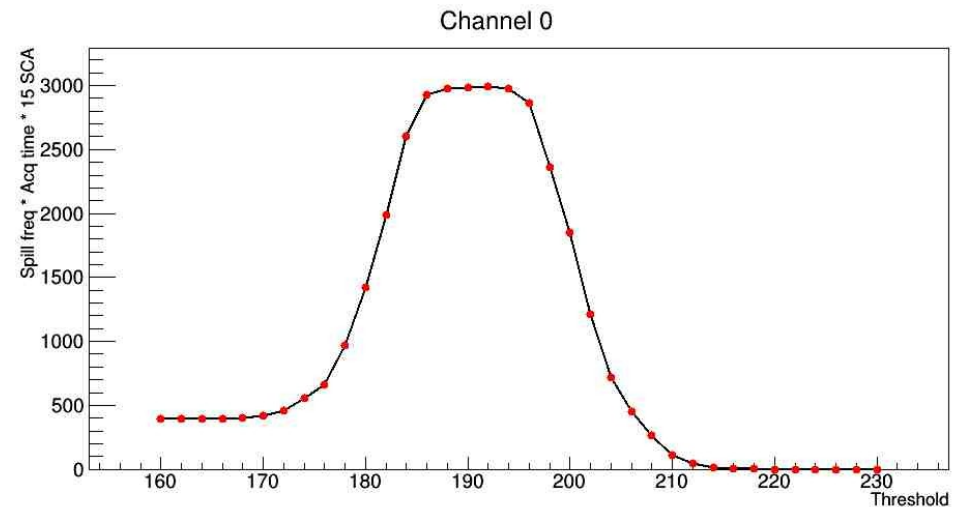
- Threshold sweep : 160 – 190



Channel 0 pedestal

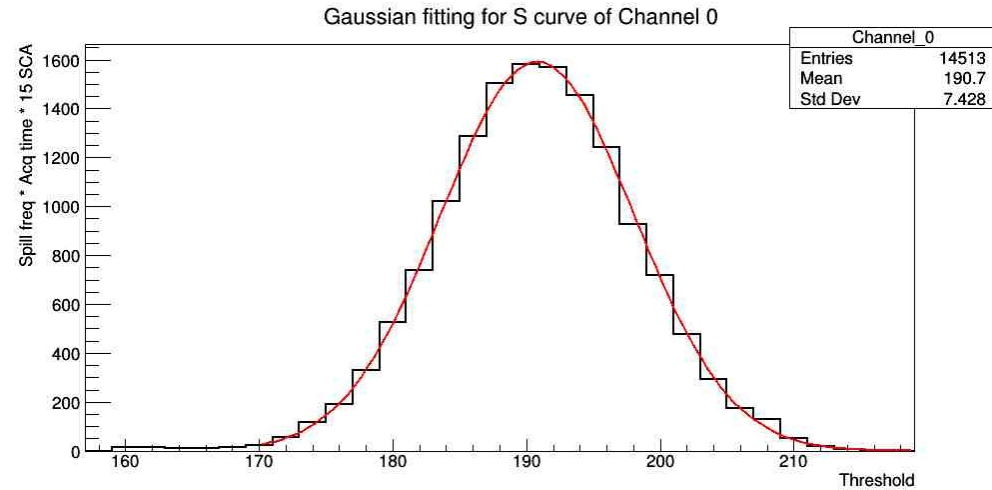
SKIROC2A

- Threshold sweep : 160 – 230

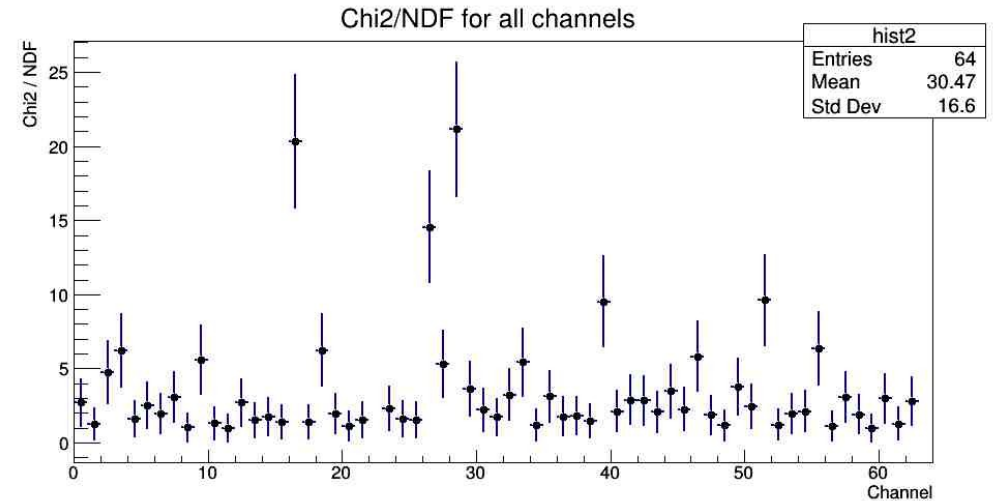
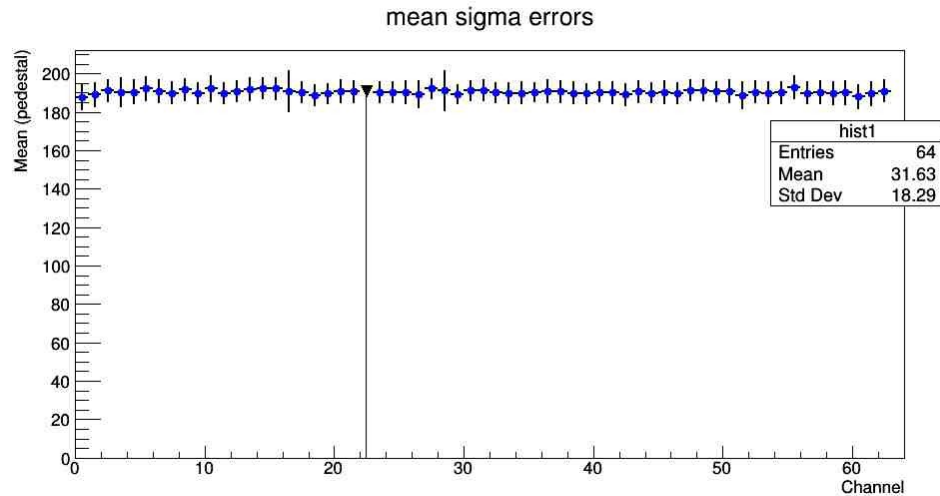


Channel 0 pedestal

Gaussian curve fitting – SK2A channel pedestals



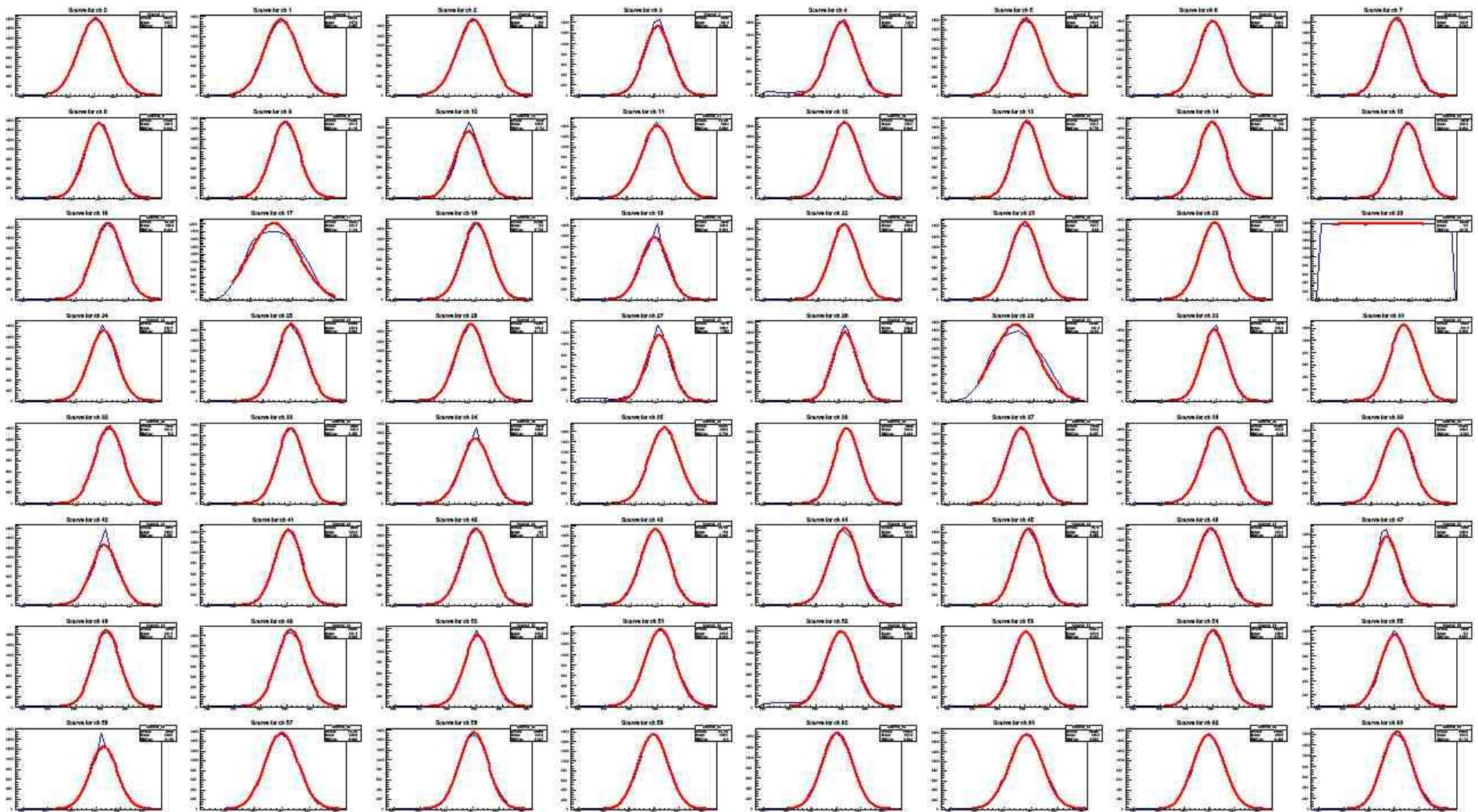
TrigCh_0 pedestal at $1245 < \text{bcid} < 1245+15$



Mean – sigma values of fitted channel pedestals with mean~190 and noise variance ~ 5.7-6.4

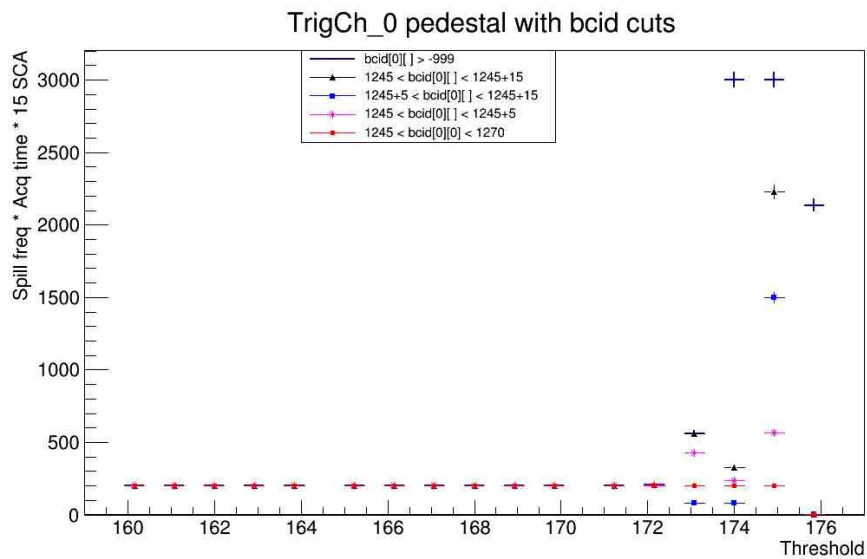
Chi2 / ndf values of fitted channel pedestals

SK2A channel pedestal fitting at $1245+5 < \text{bcid} < 1245+15$



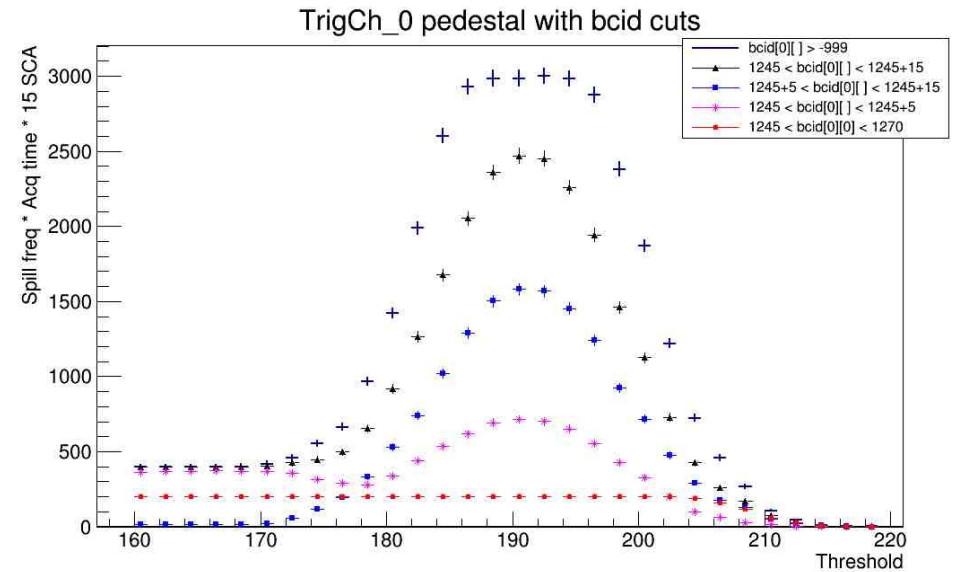
Different bcid cuts comparison for a channel pedestal

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TrigCh_0 pedestal with different bcid cuts

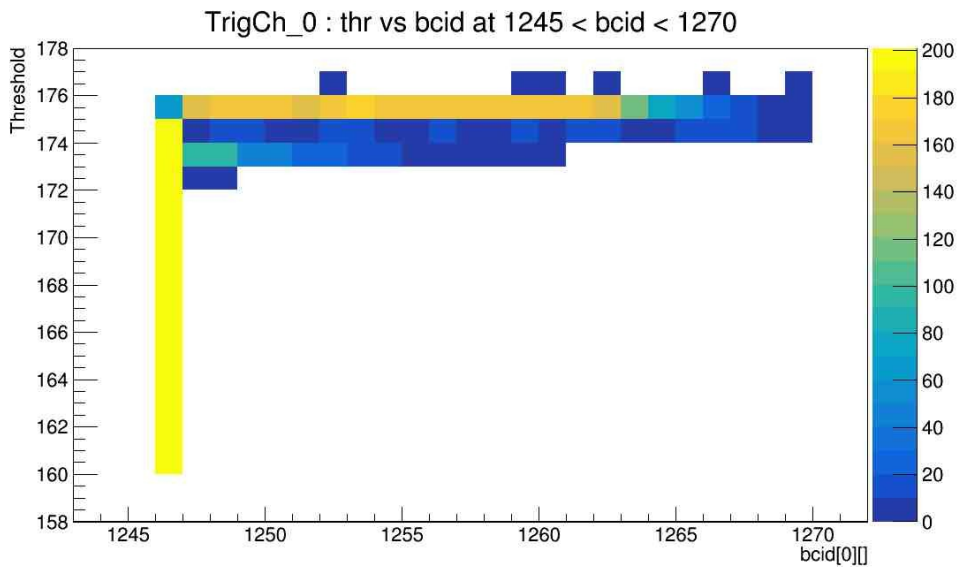
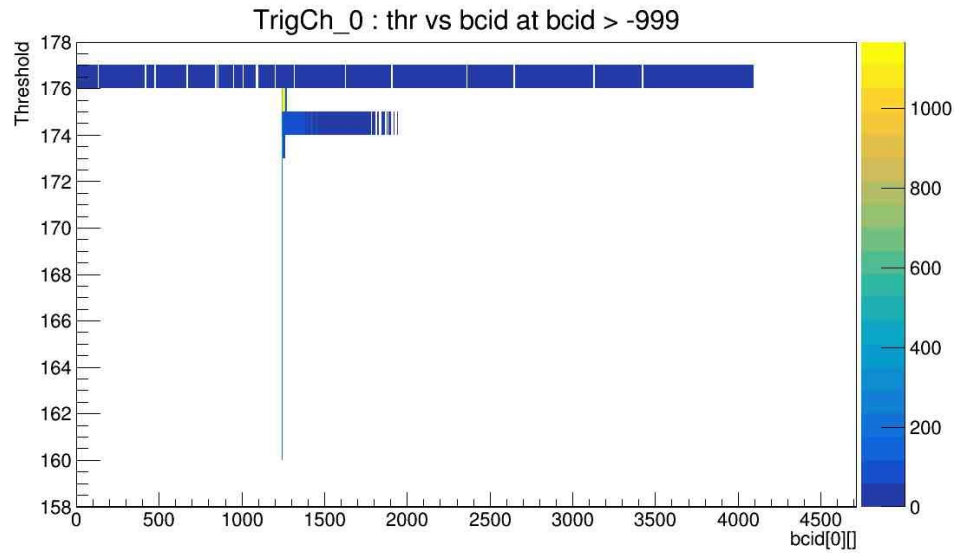
SKIROC2A



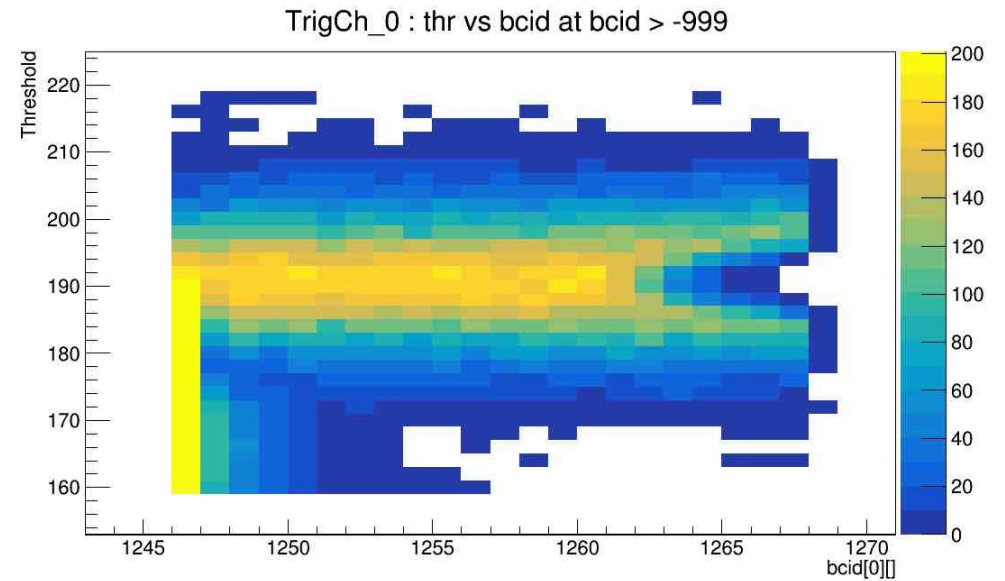
TrigCh_0 pedestal with different bcid cuts

Threshold vs BCID

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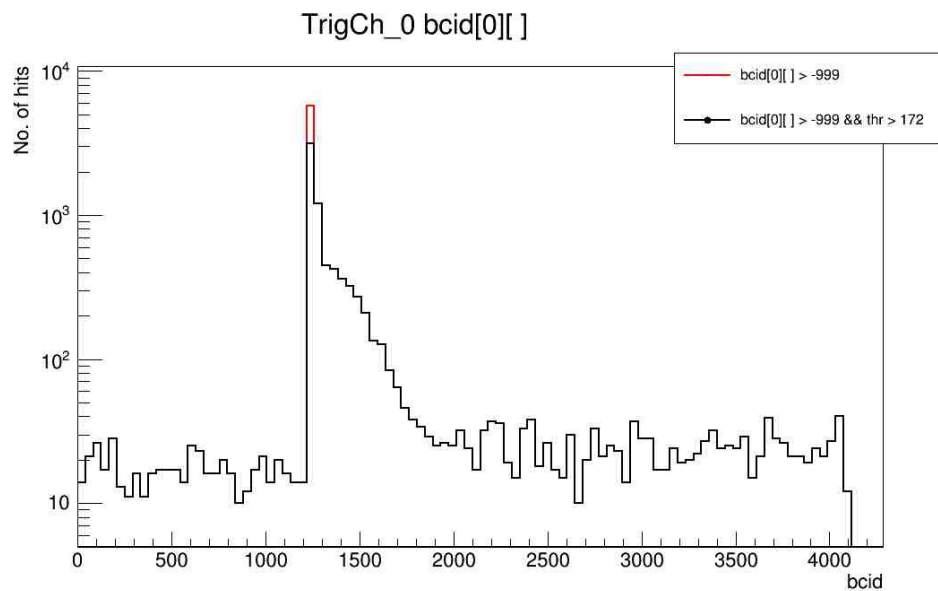


SKIROC2A



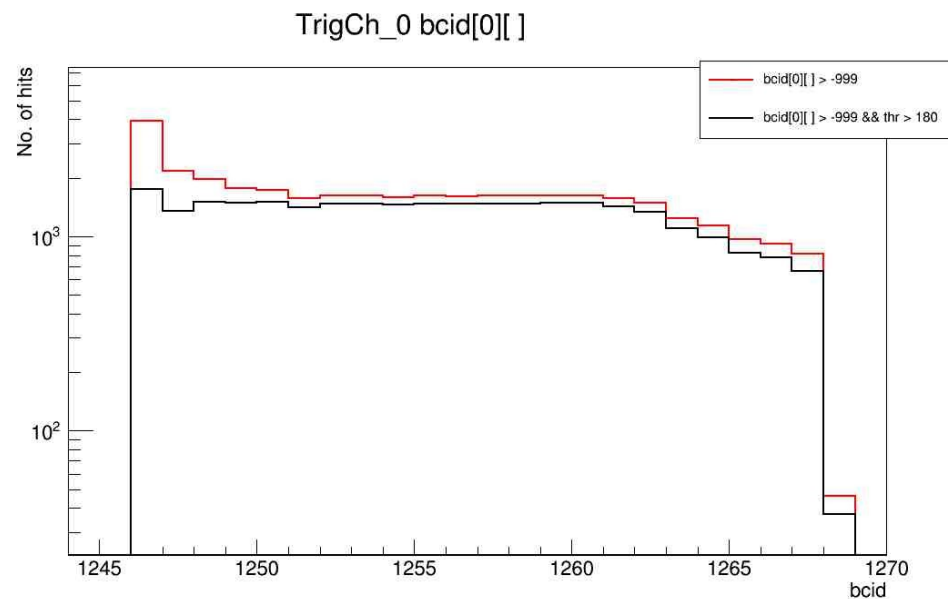
BCID around ValEvt

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TrigCh_0 : bcid[0][] with/without threshold cut (172)

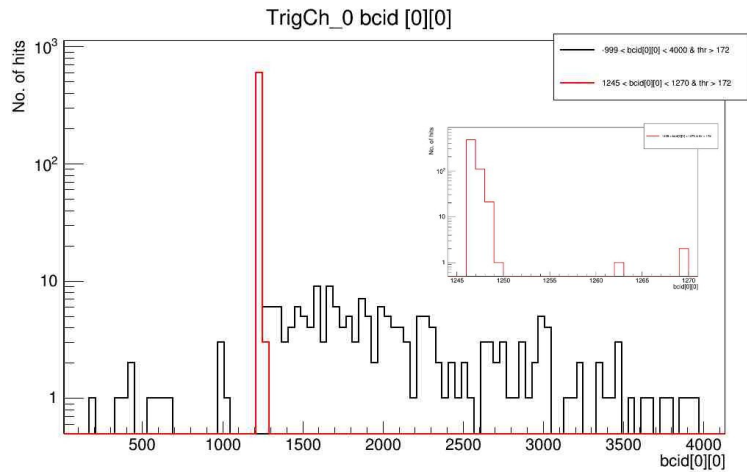
SKIROC2A



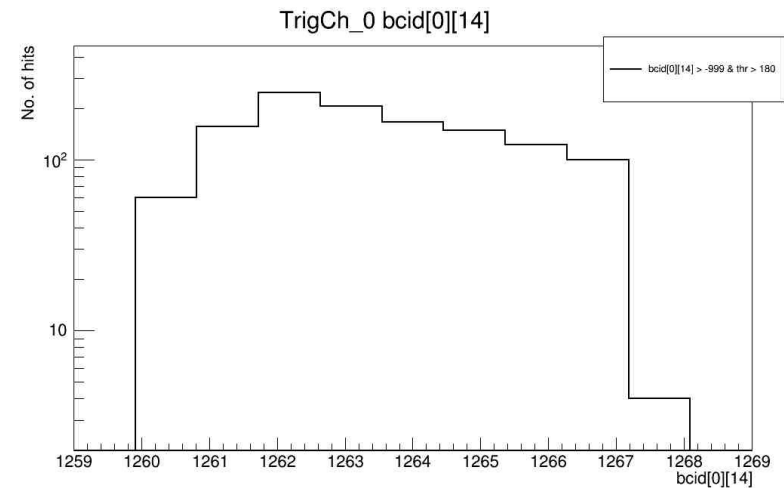
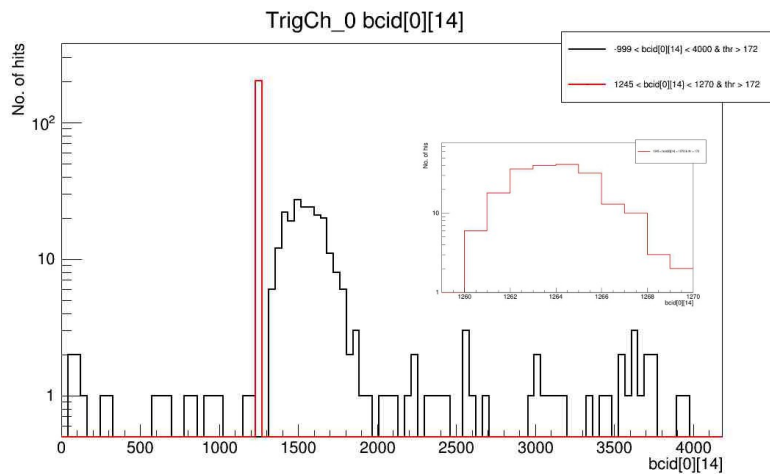
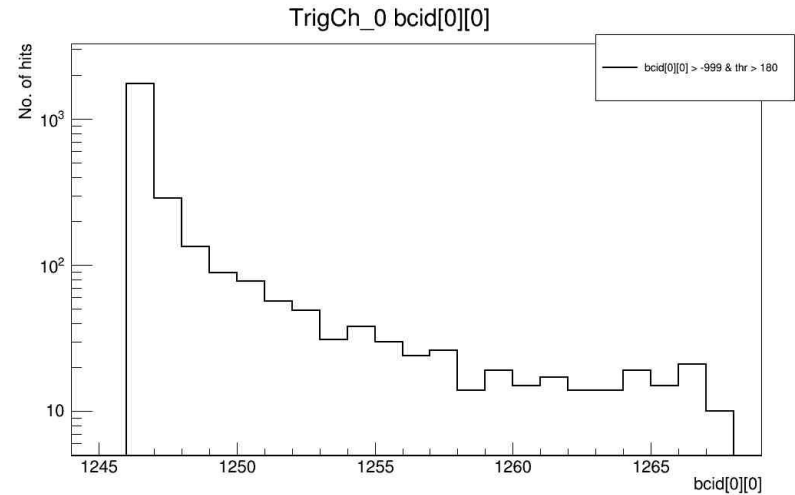
TrigCh_0 : bcid[0][] with/without threshold cut (180)

BCID around ValEvt contd...

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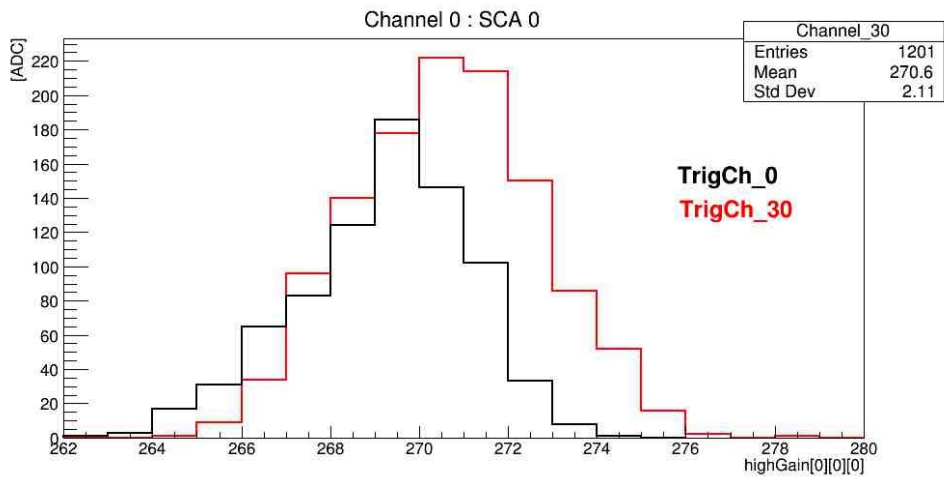


SCA 0 – SCA 14 bcid comparison with threshold > 172

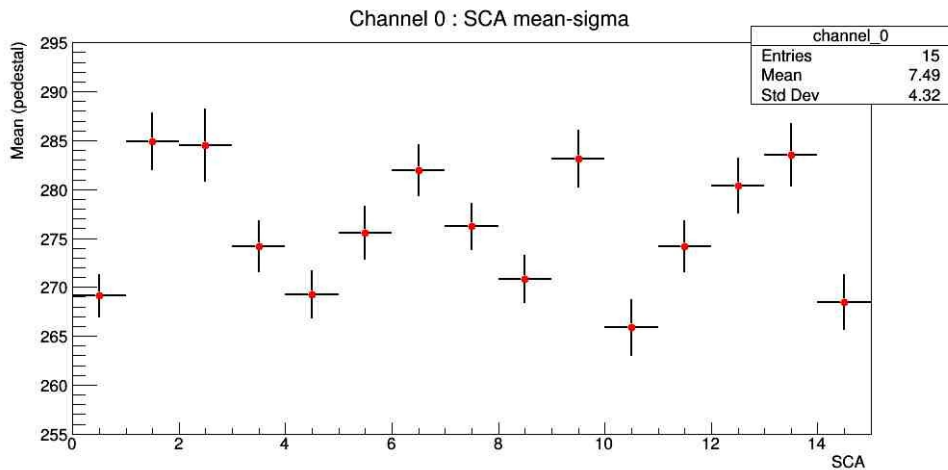
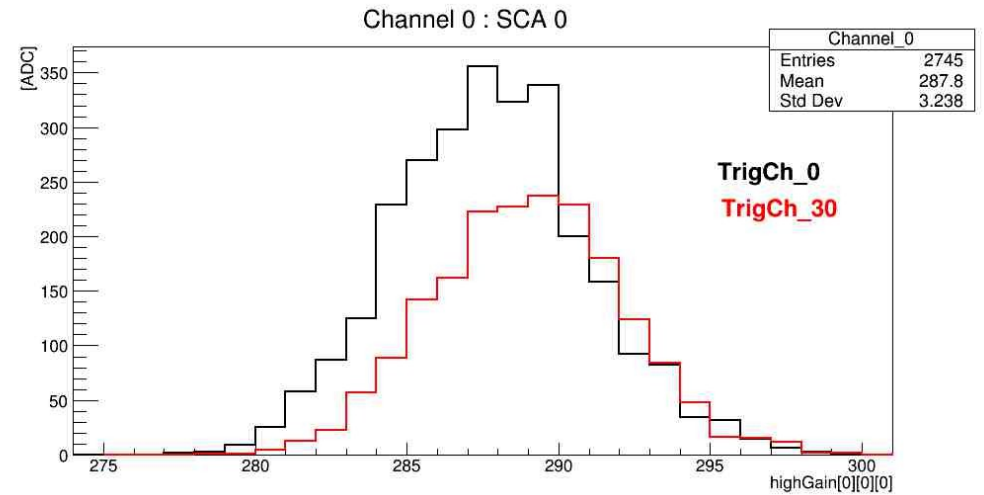
SCA 0 – SCA 14 bcid comparison with threshold > 180

SCA pedestal fitting (highGain)

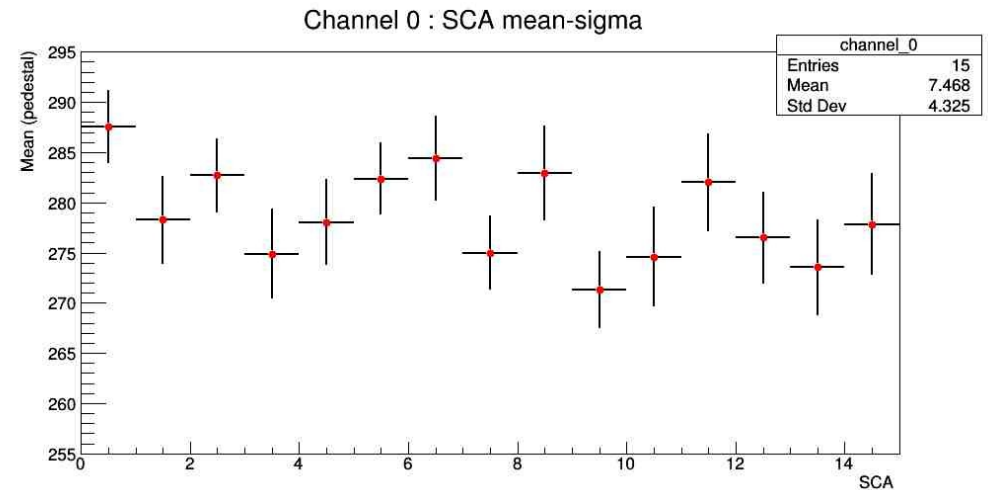
SKIROC2



SKIROC2A



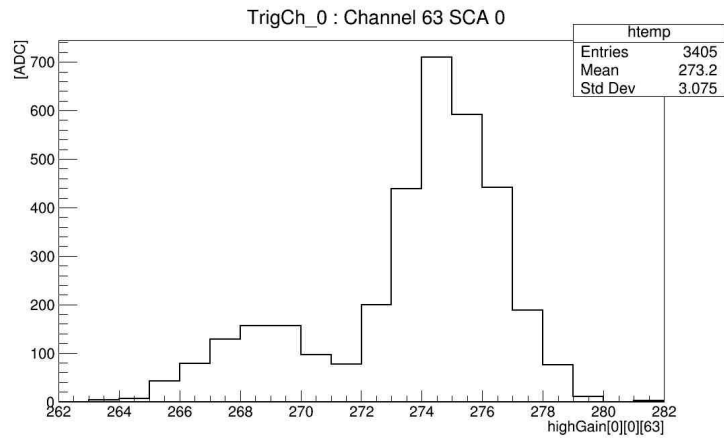
Channel 0 : 15 SCA mean-sigma at threshold > 172 with variance ~ 2.7



Channel 0 : 15 SCA mean-sigma at threshold > 180 with variance ~ 5

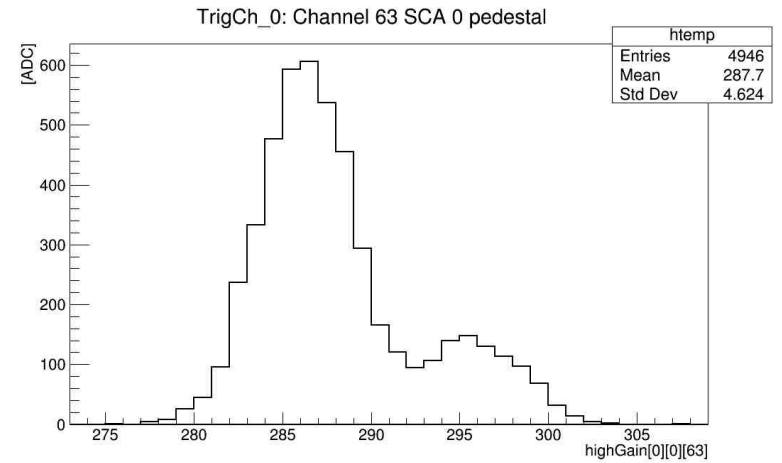
Ch_63 : SCA_0 pedestal for TrigCh_0

SKIROC2

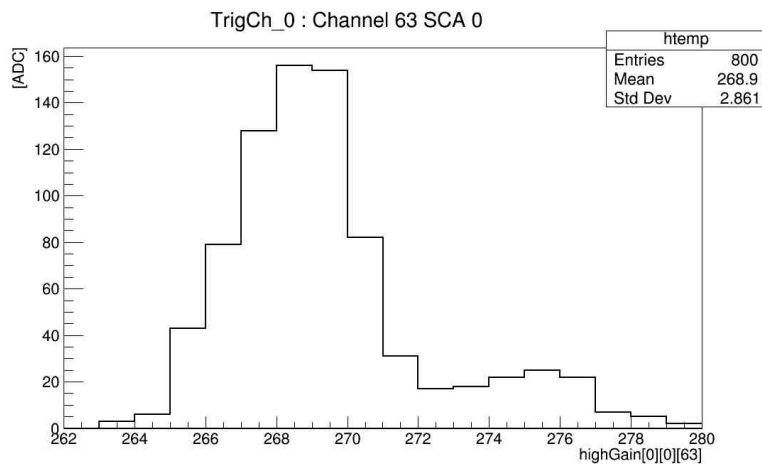


No threshold cut

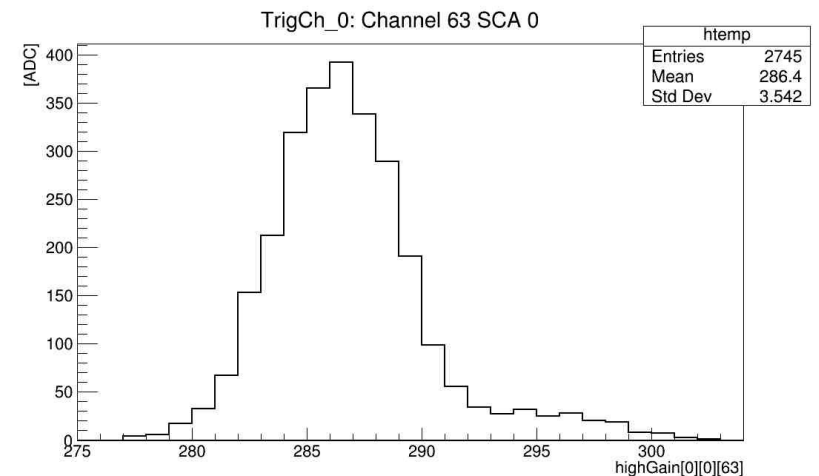
SKIROC2A



No threshold cut



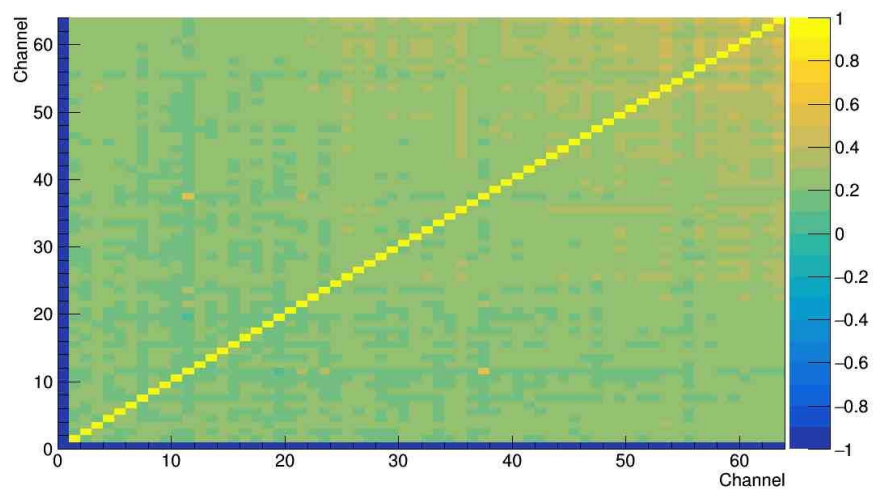
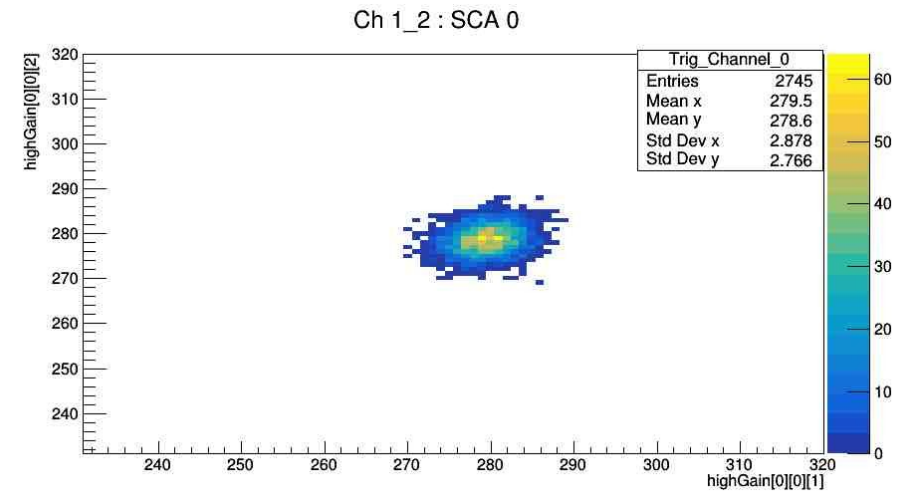
Threshold > 172



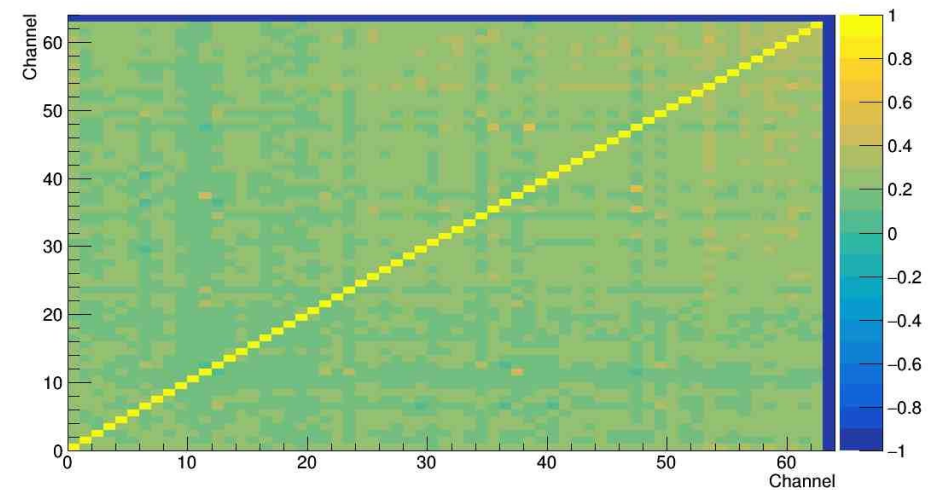
Threshold > 180

Correlation between channels (excluding triggered channel) - SK2A

Cut : threshold > 180



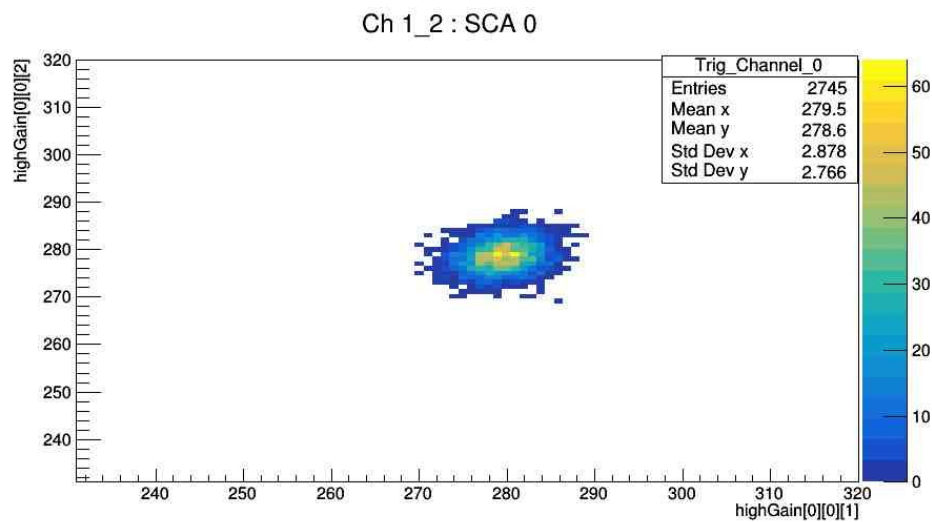
Triggered Ch 0



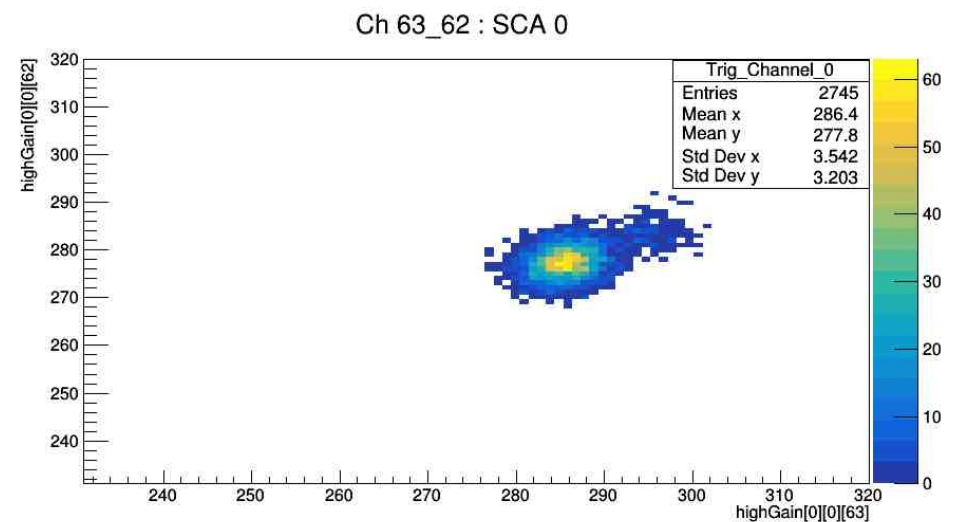
Triggered Ch 63

highGain relative plots

Cut : threshold > 180 ; Triggered Ch : 0



Ch 1 : Ch 2 for SCA 0



Ch 63 : Ch 62 for SCA 0

