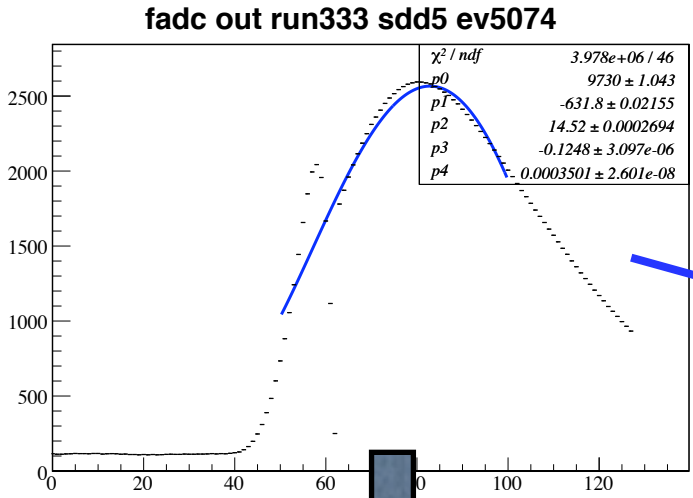
8th/Nov/2006 H. Tatsuno

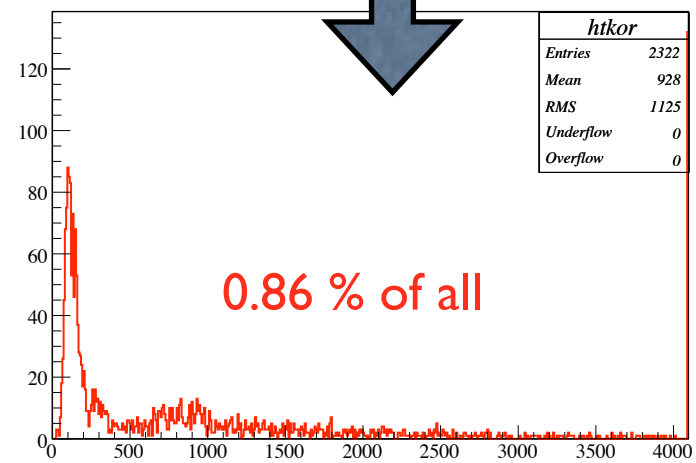
Post pile-up rejection

for run 333-337 sdd5

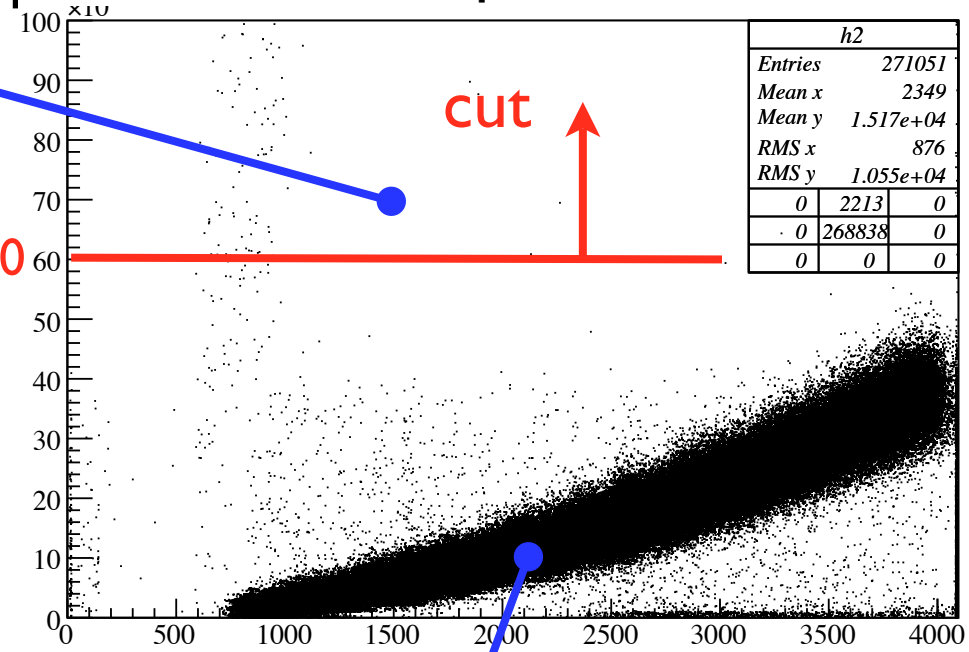
1. Main peak chisquare cut
2. Correlation between the post slope and TKO-ADC/the peak position
3. Post slope cut

Main peak chisquare cut

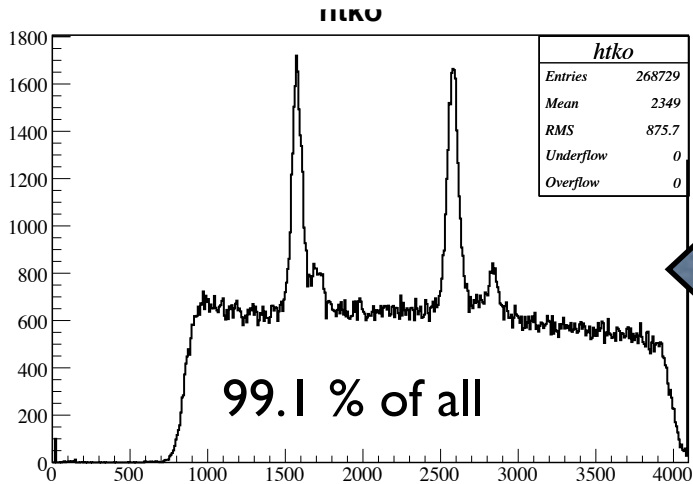


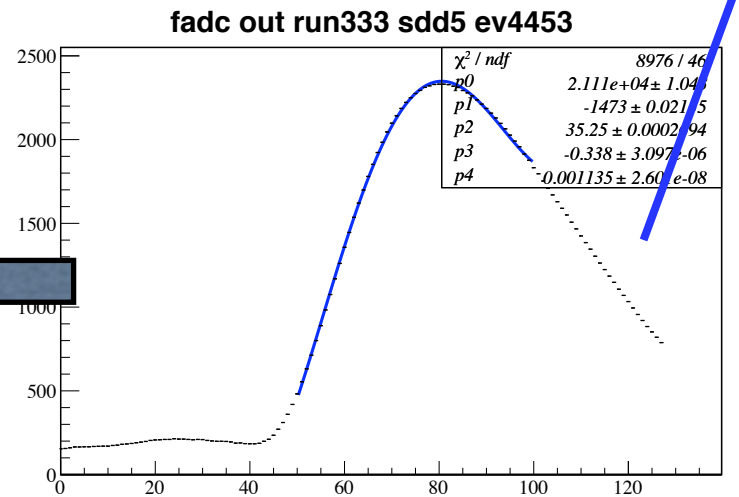


chisq



TKO ADC [ch]

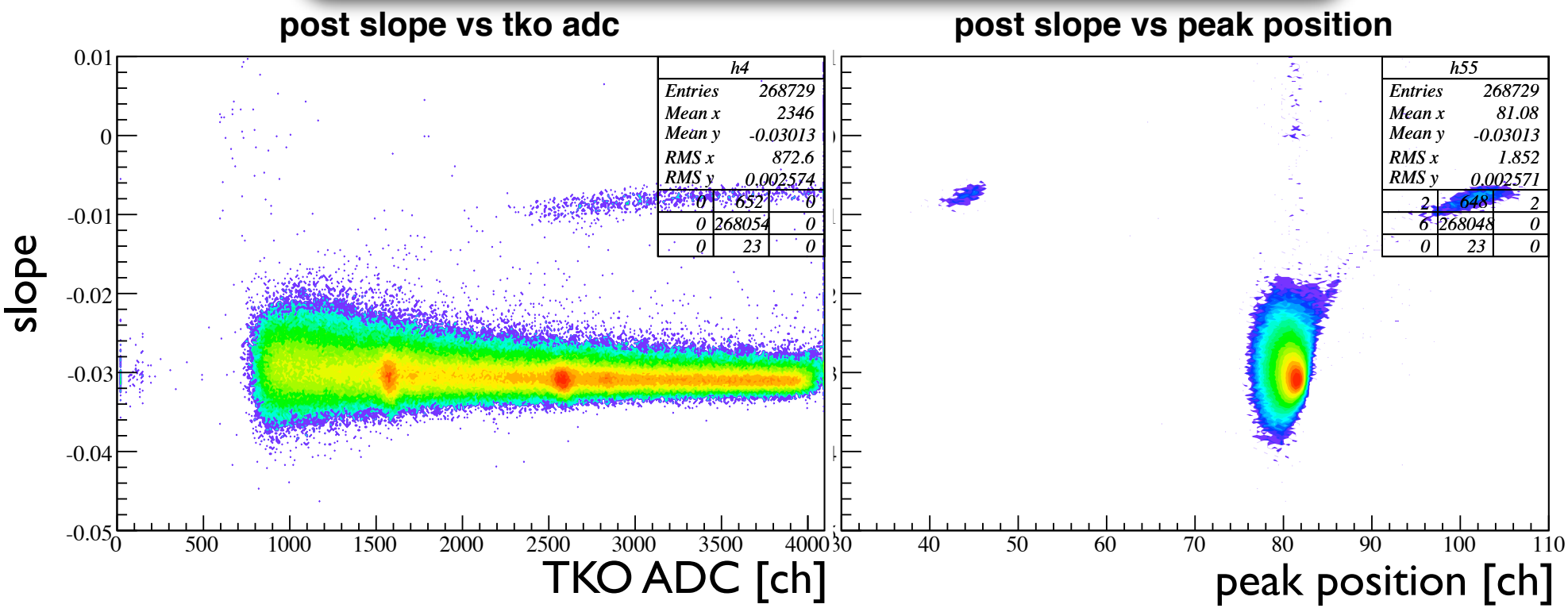




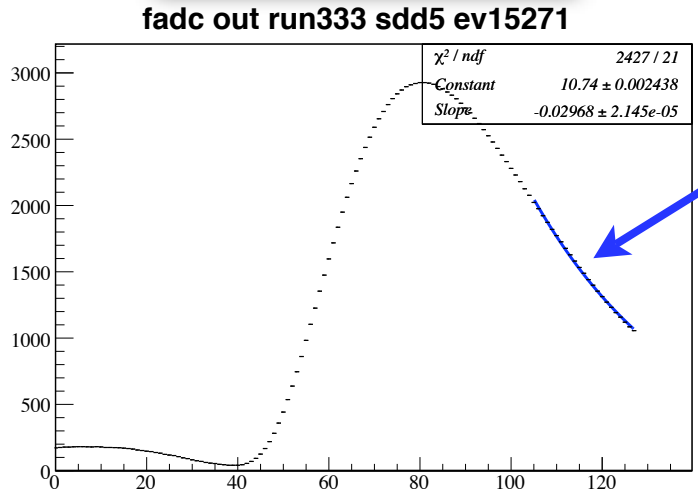
total 271051 events

268729 events

Correlation between the post slope and TKO-ADC/the peak position

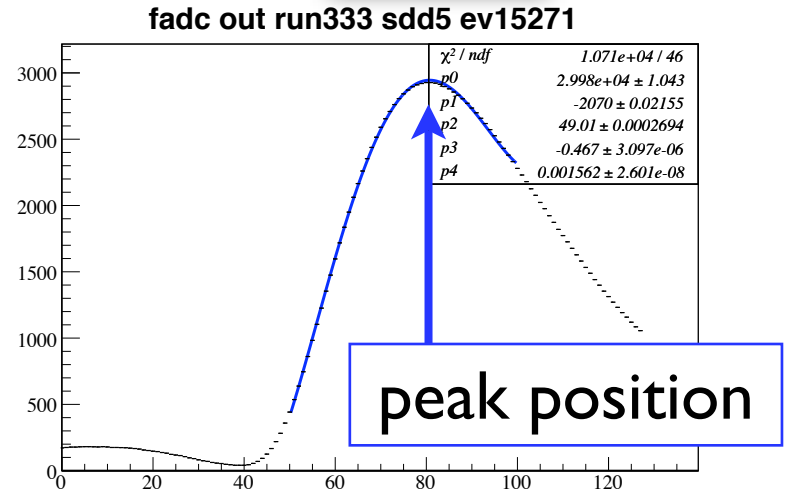


exponential fit



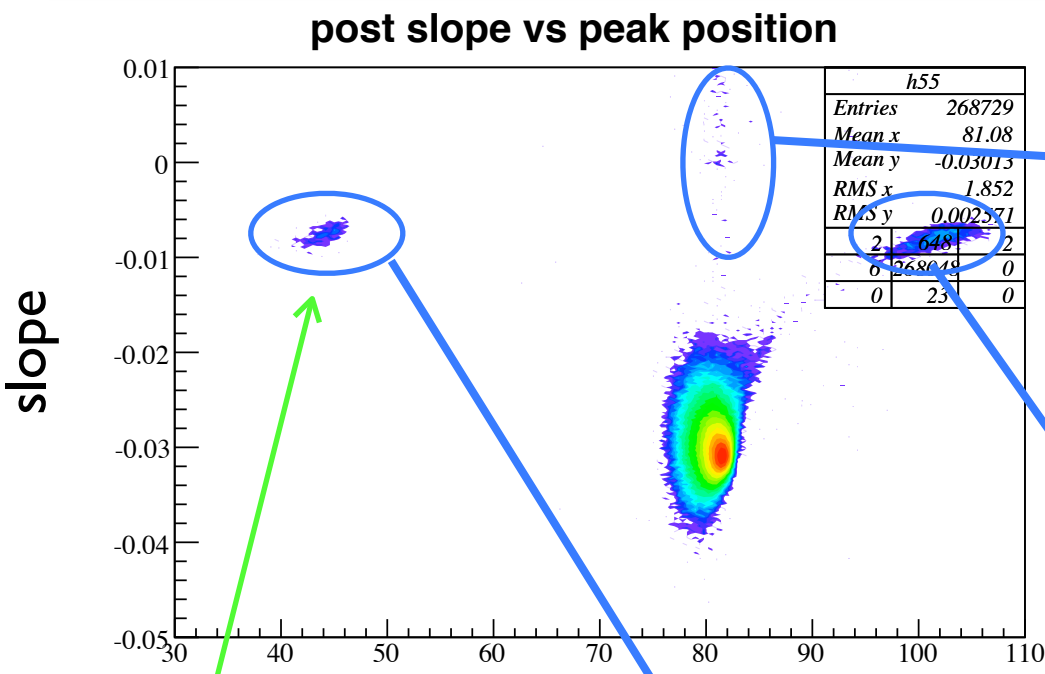
post slope

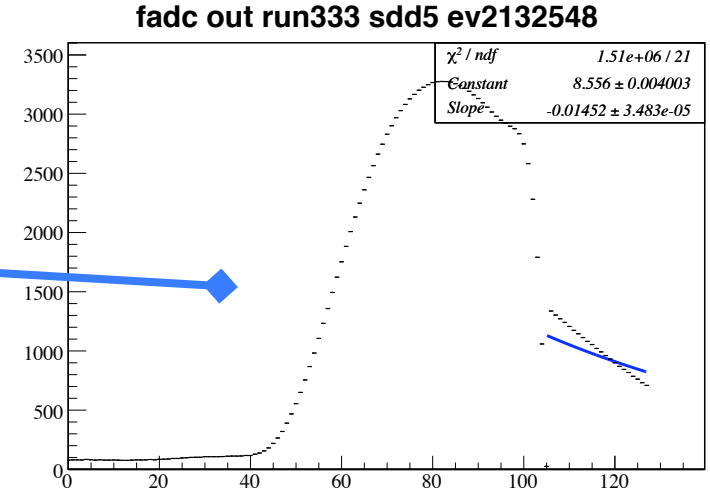
pol4 fit



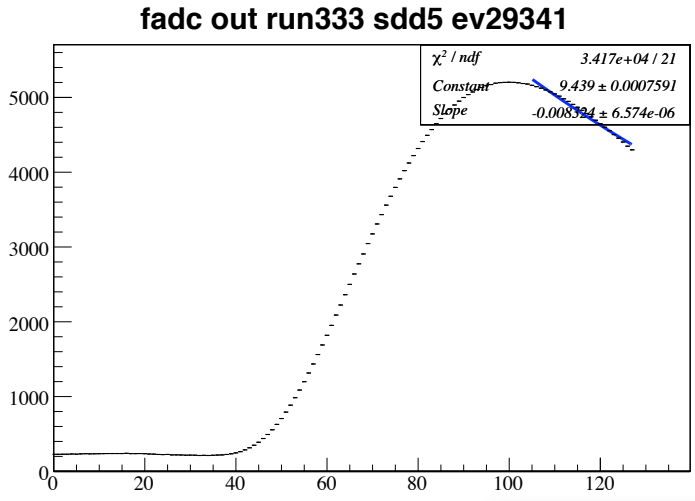
peak position

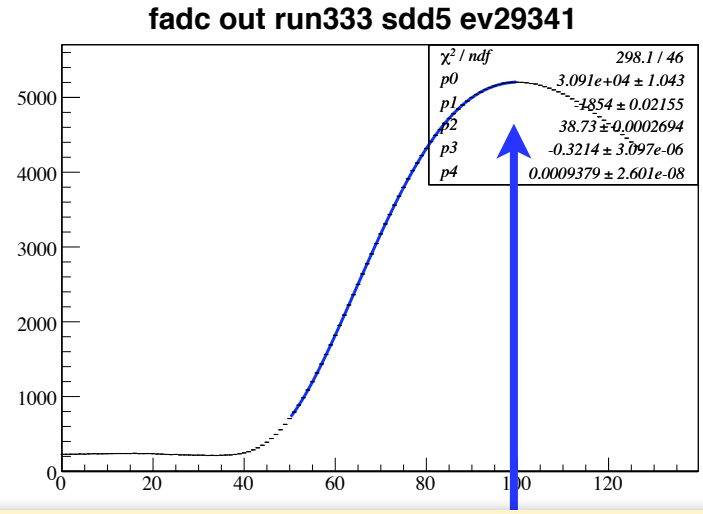
Waveforms in the strange correlation...





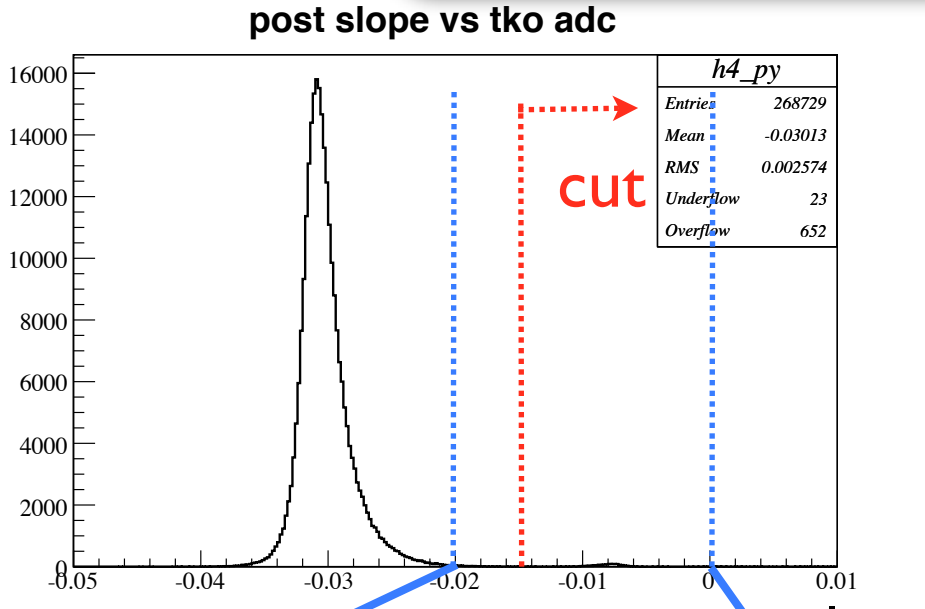
The calculation for searching the peak position didn't converged (Newton method)

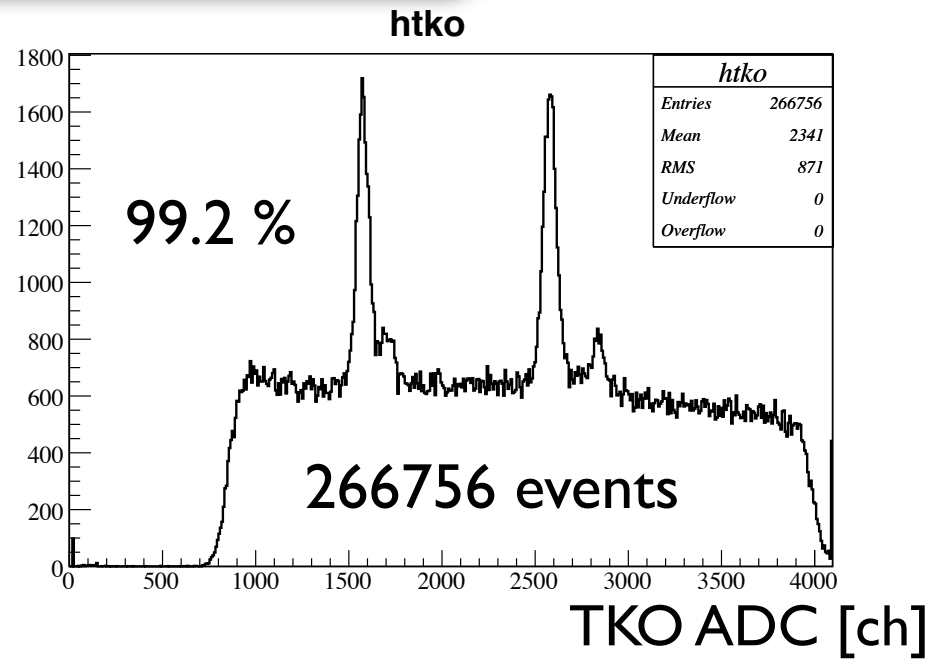


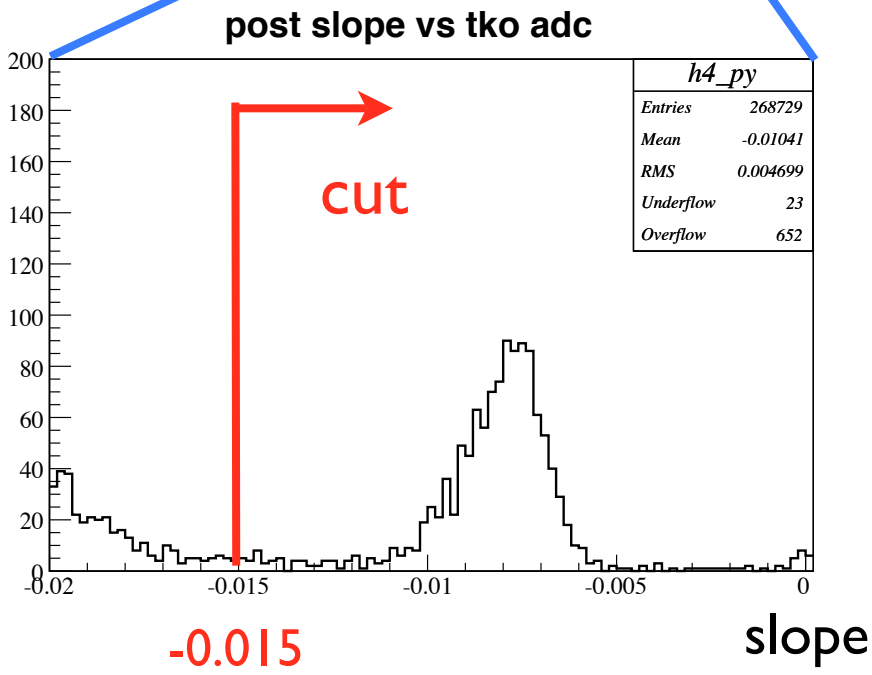


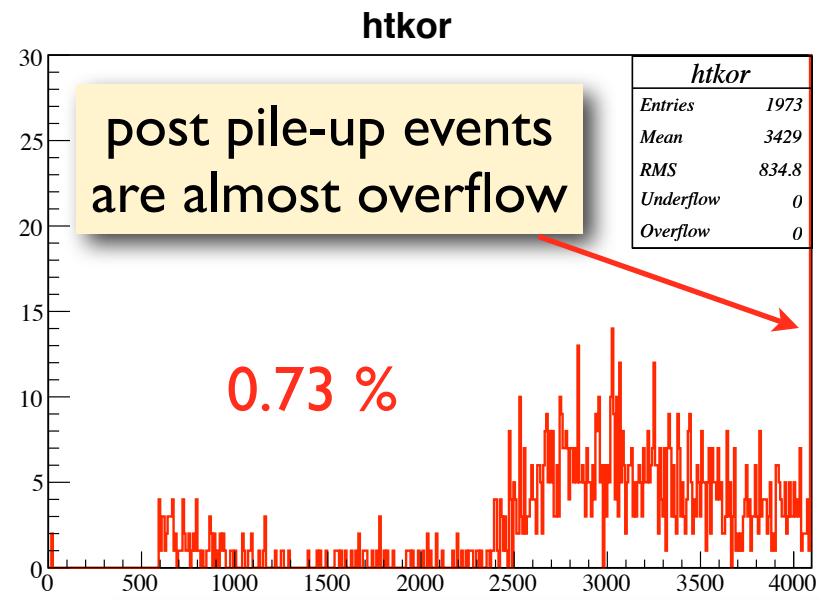
The peak position is not normal ! (a little higher; different timing ?)

Post slope cut for TKO-ADC spectra









Not continuum distribution !!
No relation to the timing ?

Summary

1. Main peak chisquare cut

   About 1 % events are rejected by the chisquare (<= 60k) defined from 4-pol fit (weight 1).

2. Correlation between the post slope and TKO-ADC/the peak position

   The post slope have some information of the post state of a waveform.

3. Post slope cut

   About 1 % events are rejected by the post slope cut. The spectrum shape of the rejected events is not the continuum distribution. Maybe these events (their peak positions are a little higher) are caused by a post pile-up in the same shape timing (3μs)...?